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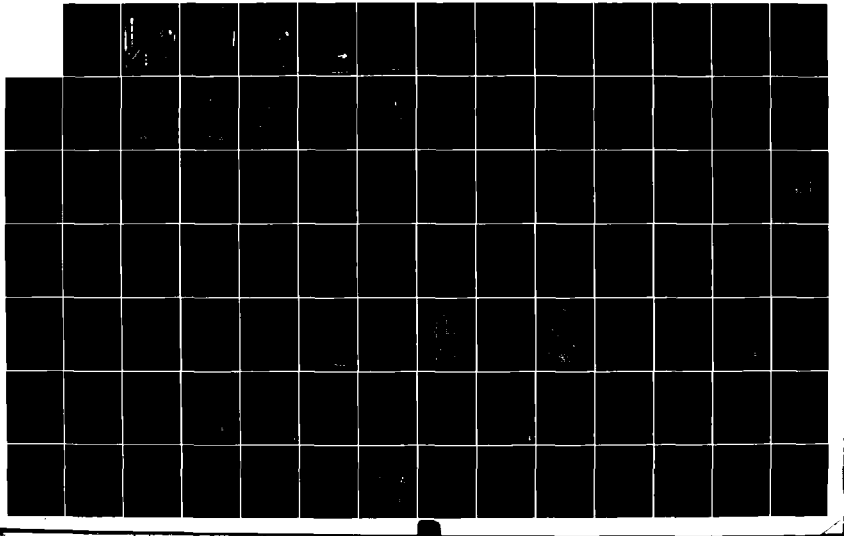

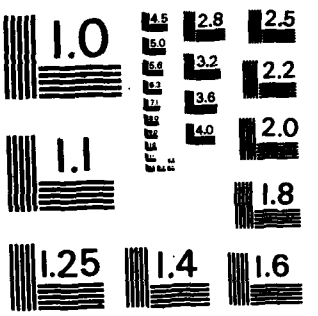

ARCHAEOLOGY OF THE GAINESVILLE LAKE AREA: SYNTHESIS

by
NED J. JENKINS

With Contributions by
Gloria G. Cole
H. Blaine Ensor
and
Mary C. Hill

VOLUME V
OF
ARCHAEOLOGICAL INVESTIGATIONS IN THE GAINESVILLE LAKE AREA OF THE TENNESSEE-TOMBIGBEE WATERWAY

Prepared for
U.S. Army Corps of Engineers,
Mobile District

Report of Investigations No. 28
Office of Archaeological Research
The University of Alabama

1982

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Five prehistoric sites within the impact zone of the Gainesville portion of the Tennessee-Tombigbee Waterway were excavated under this contract.

This volume synthesizes the data gathered during the investigations.

Other volumes present the excavations (Volume 1), the ceramic analysis (Volume 2), the lithic analysis (Volume 3), and the biocultural studies (Volume 4).

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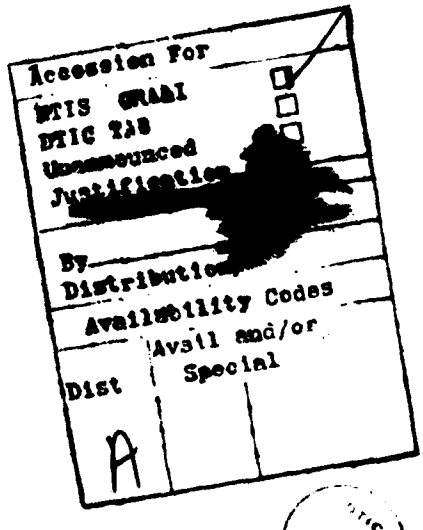
Volume V
of
Archaeological Investigations
in the Gainesville Lake Area
of the Tennessee-Tombigbee Waterway

A Report Prepared in Cooperation
with the U.S. Army Corps of Engineers
Mobile District, in Partial Fulfillment
of Contract Number DACW01-76-C-0120

Report of Investigations No. 23
Office of Archaeological Research
The University of Alabama
September, 1982

DEDICATION

This volume is dedicated to David L. DeJarnette, who pointed most of us in the directions we have taken in Alabama Archaeology, and in that sense, is a major contributor to this final volume on the Gainesville Lake excavations.



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This volume is essentially a product of approximately ten years research along the central Tombigbee River. This work has been funded primarily by the United States Army Corps of Engineers as a result of the impending construction of the Tennessee-Tombigbee Waterway. Although the completion of this volume satisfies the final requirements of Contract DACW01-76-C-0120, the knowledge contained herein is also a product of several previous contracts.

It is not easy to adequately acknowledge the contributions made by so many people over such a long time. First the United States Army Corps of Engineers should be commended for funding this project and others along the Tennessee-Tombigbee Waterway. The collections obtained from this mammoth project, in the heart of the Southeast, will certainly provide fruitful research for future generations of archaeologists.

Jerry Nielsen, Senior Archaeologist for the Mobile District United States Army Corps of Engineers, not only administered the project for the Corps but he also initiated the author into the archaeology of the Tombigbee River over ten years ago. Ernie Seckinger, Archaeologist for the United States Army Corps of Engineers, Mobile District, assumed many of the administrative duties of this project for the Corps over the last two years.

Carey B. Oakley, Director of The University of Alabama, Office of Archaeological Research (OAR), believed that this project could be finished and he perserved to see that it was finished. Considering the rather severe budget limitations compared to other projects of similar size, and the vast amount of data presented, Mr. Oakley deserves a great deal of credit for guiding this project to completion.

A great deal of credit is also due Dr. Richard Krause, former chairman of the Department of Anthropology at The University of Alabama, for his enthusiasm, advice, and criticism. He has always inspired all of us to do a better job.

Several members of the OAR staff deserve special credit for their role in the completion of this report. Gloria Cole edited the frequently awkward verbage thus rendering the report more readable. Richard Walling produced the figures and made many constructive comments on the original draft. Annie Crenshaw drew the excellent vessel reconstructions in Figure 1, Appendix 1. Polly Futato assisted in the final preparation of the figures and tables. Kemp White and Jackie Redding entered the manuscript on the IBM System 6 Word Processor.

Individuals who have contributed original research to this volume and the other four Gainesville volumes are to be commended for their dedication, patience, and contributions. They include H. Blaine Ensor, Gloria M. Caddell, Mary C. Hill, Anne Woodrick, Gloria G. Cole, Cailup B. Curren, and Vernon J. Knight, Jr. This summary volume would not have been possible without their detailed studies.

H. Blaine Ensor contributed Chapter III to this volume--a summary of the Paleo-Indian and Archaic stages in the Gainesville Lake area. Blaine also contributed the study of the Bioarchaeology of the Gainesville Lake area which was first presented in a paper at the Southeastern Archaeological Conference (Ensor and Hill 1979) and appeared in the appendix of the original draft of this report. Since the research for that paper was completed in 1979, the Late Woodland subphases in the Gainesville Lake area have been more clearly defined and dated. The version that appears in this report resulted from a complete review of the mortuary data by Gloria G. Cole and of the osteological data by Mary C. Hill.

Vernon J. Knight, Jr. reviewed and made substantive revisions to the section on Summerville I ceremonialism and has documented the significance of Southern Cult motif artifacts recovered at Site 1Pi33 in that section.

Dr. Christopher S. Peebles extended patience and expertise in preparing the computer seriation of the Gainesville ceramics (Appendix 1).

A number of archaeologists deserve credit for numerous hours of discussion which aided in the formulation of many of the ideas found in this report. They are: Larry Alexander, Jim Atkinson, Judy Bense, Sam Brookes, David Brose, David Chase, Ben Coblentz, David Dye, Eugene Futato, James B. Griffin, Jim Knight, Bob Lafferty, Dick Marshall, Baxter Mann, John O'Hear, Chris Peebles, Janet Rafferty, Craig Sheldon, Carlos Solis, Vin Steponaitis, Read Stowe, Rick Walling, John Walthall, and Rusty Wiesman.

Finally, the help and interest of the citizens of Aliceville, Alabama contributed greatly to the completion of this project. Special thanks are due Mayor Leroy Spied and Mr. Tommy Kimbrell.

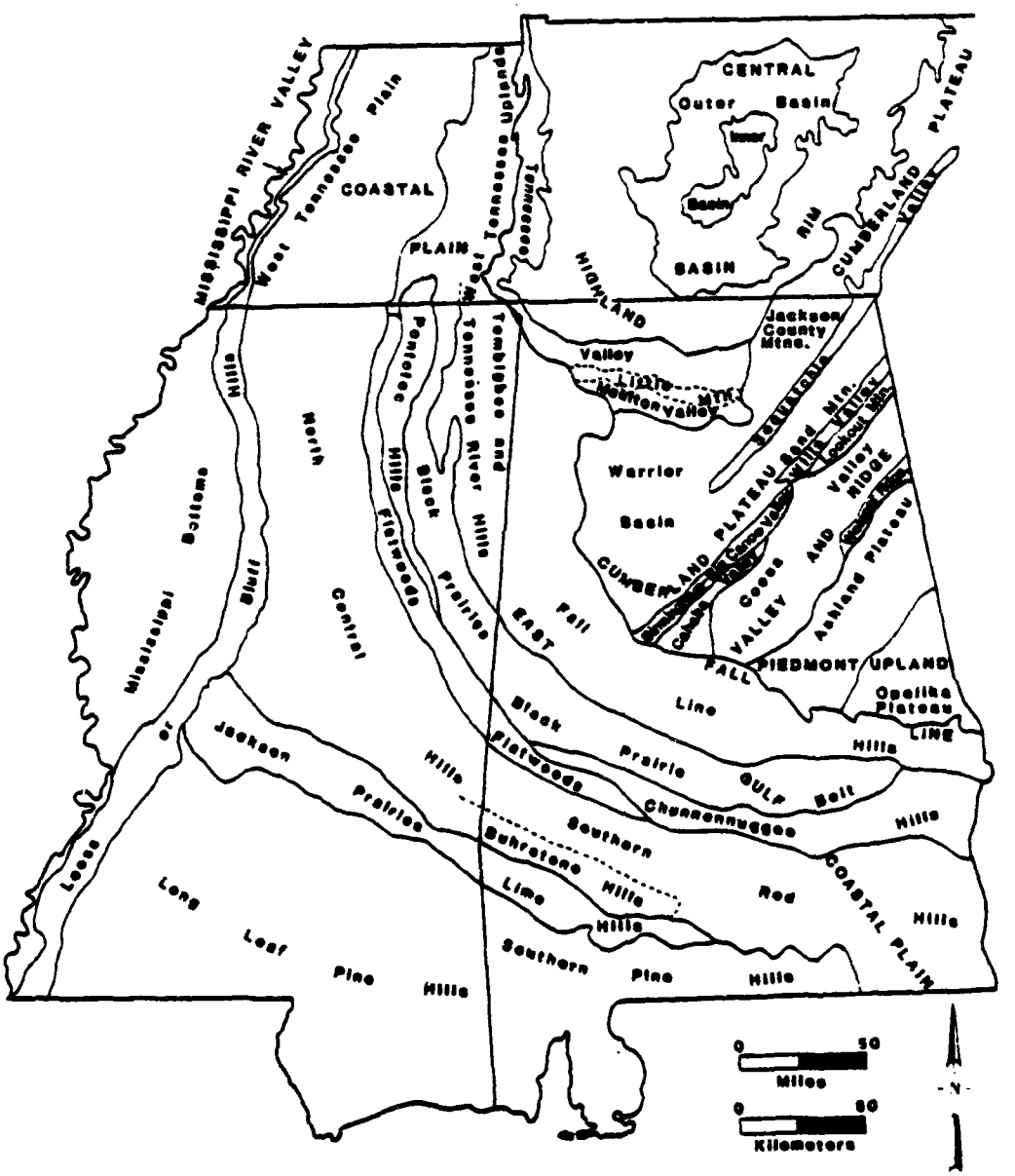
Ned J. Jenkins

Ned J. Jenkins, Staff Archaeologist
Office of Archaeological Research
The University of Alabama

Carey B. Oakley

Carey B. Oakley, Director
Office of Archaeological Research
The University of Alabama

Physiographic Divisions and Provinces of Alabama, Mississippi, and West and Middle Tennessee



Adapted from: Stephenson and Monroe 1940, Copeland 1968, and Miller 1974

Frontispiece.

CHAPTER I

INTRODUCTION

This volume is the final requirement of a contract negotiated between the United States Army Corps of Engineers, Mobile District and the Office of Archaeological Research, University of Alabama for archaeological investigations within the Tennessee-Tombigbee Waterway (Fig. 1) at five sites in the Gainesville Lake area located in Sumter, Greene and Pickens Counties, Alabama (Fig. 2).

As per terms of contract DACW01-76-C-0120 extensive excavations were conducted at Sites 1Gr1X1, 1Gr2, 1Gr50, 1Pi33 and 1Pi61. The work performed at these sites has produced data that has been presented in five volumes: Volume I, the excavations (Jenkins and Ensor 1981); Volume II, ceramic description and chronology (Jenkins 1981); Volume III, lithics (Ensor 1981a); Volume IV; flora, fauna and human osteology (Caddell et al. 1981); and Volume V, synthesis (this volume).

The overall goals of the Gainesville Lake area project have been twofold and are not mutually exclusive. The first goal is the mitigation of the adverse impacts on the nonrenewable cultural resources of the Gainesville Lake area. Mitigation includes, as per the scope-of-work, conducting archaeological salvage excavations to allow maximum amounts of information and preparation of a report detailing those activities and findings. The second goal entails presentation and interpretation of the data in such a manner as to formulate an approximation of the successive lifeways that evolved during the 12,000 year prehistory of the Gainesville Lake area. To document successive lifeway changes, variability in the material culture throughout a sequence of evolutionary stages was the focus of these volumes. To accomplish documentation of these successive changes, the different classes of portable data; ceramics, lithics, flora, fauna, and osteological remains, have been analyzed and described by different specialists. These data, summarized in this volume, have been interpreted within a regional, and in some cases, a subareal, perspective in order to better understand the processes involved in the development of the sequential cultural systems within the central Tombigbee valley.

Although a research design was not required at the inception of this project, the excavations, analysis, and description were oriented from the beginning toward the above stated goals. Sites were excavated using a combination of hand and mechanical excavation techniques (Jenkins and Ensor 1981). Excavations were planned to identify both stratified and closed contexts. A series of grid squares was first excavated at each site, primarily to recover materials in stratified contexts. Stratified deposits, however, were not present at all sites. The top soil and midden was then stripped from large portions of the sites to uncover subsurface features (Figs. 3, 4, 5, 6). Practically all of Sites 1Gr2 and 1Pi61 was stripped in this manner. The least stratified sites, Sites 1Pi61 and 1Pi33, produced the best results from stripping. All excavated units were either dry or waterscreened through one-quarter inch mesh and a large num-

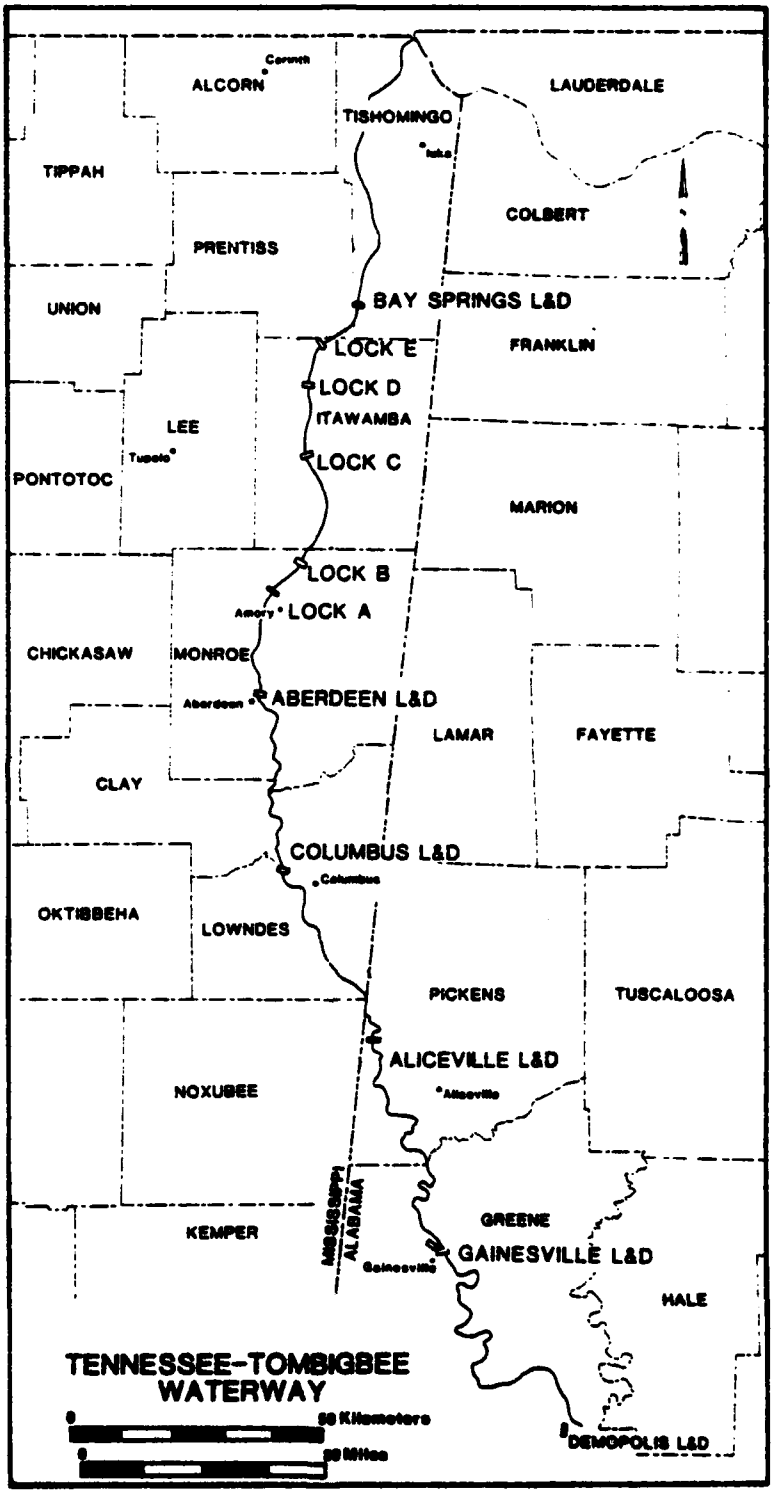

ALCORN
Corinth
TISHOMINGO
Iuka
LAUDERDALE
TIPPAH
COLBERT
PRENTISS
UNION
BAY SPRINGS L&D
LOCK E
FRANKLIN
LOCK D
ITAWAMBA
LEE
Tupelo
LOCK C
PONTOTOC
MARION
LOCK B
Amory
LOCK A
CHICKASAW
MONROE
Aberdeen
ABERDEEN L&D
LAMAR
FAYETTE
CLAY
COLUMBUS L&D
Columbus
OKTIBBEHA
LOWNDES
PICKENS
TUSCALOOSA
ALICEVILLE L&D
Aliceville
NOXUBEE
MISSISSIPPI
ALABAMA
GREENE
KEMPER
Gainesville
GAINESVILLE L&D
HALE
TENNESSEE-TOMBIGBEE
WATERWAY
50 Kilometers
50 Miles
DEMOPOLIS L&D

Figure 1.

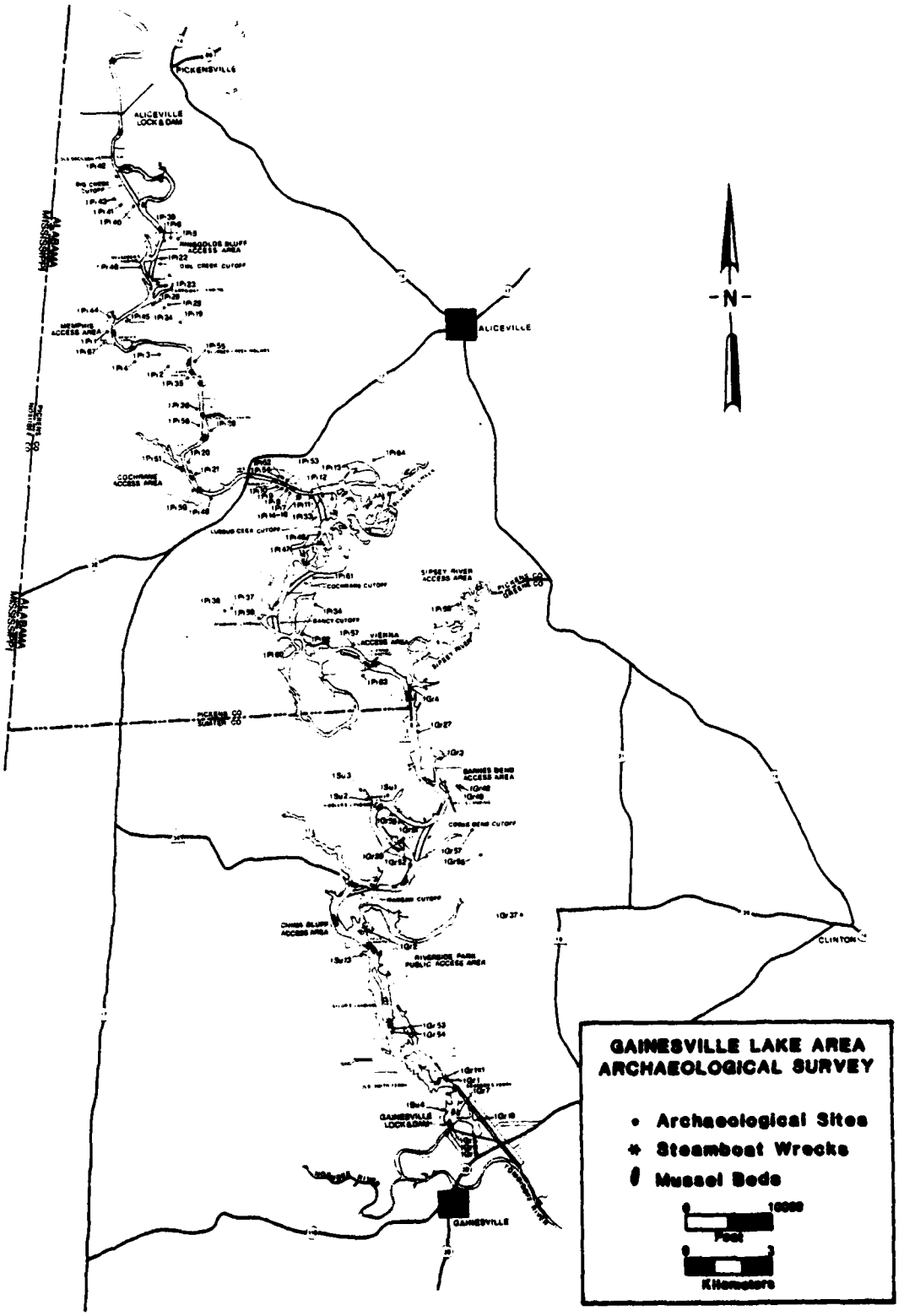
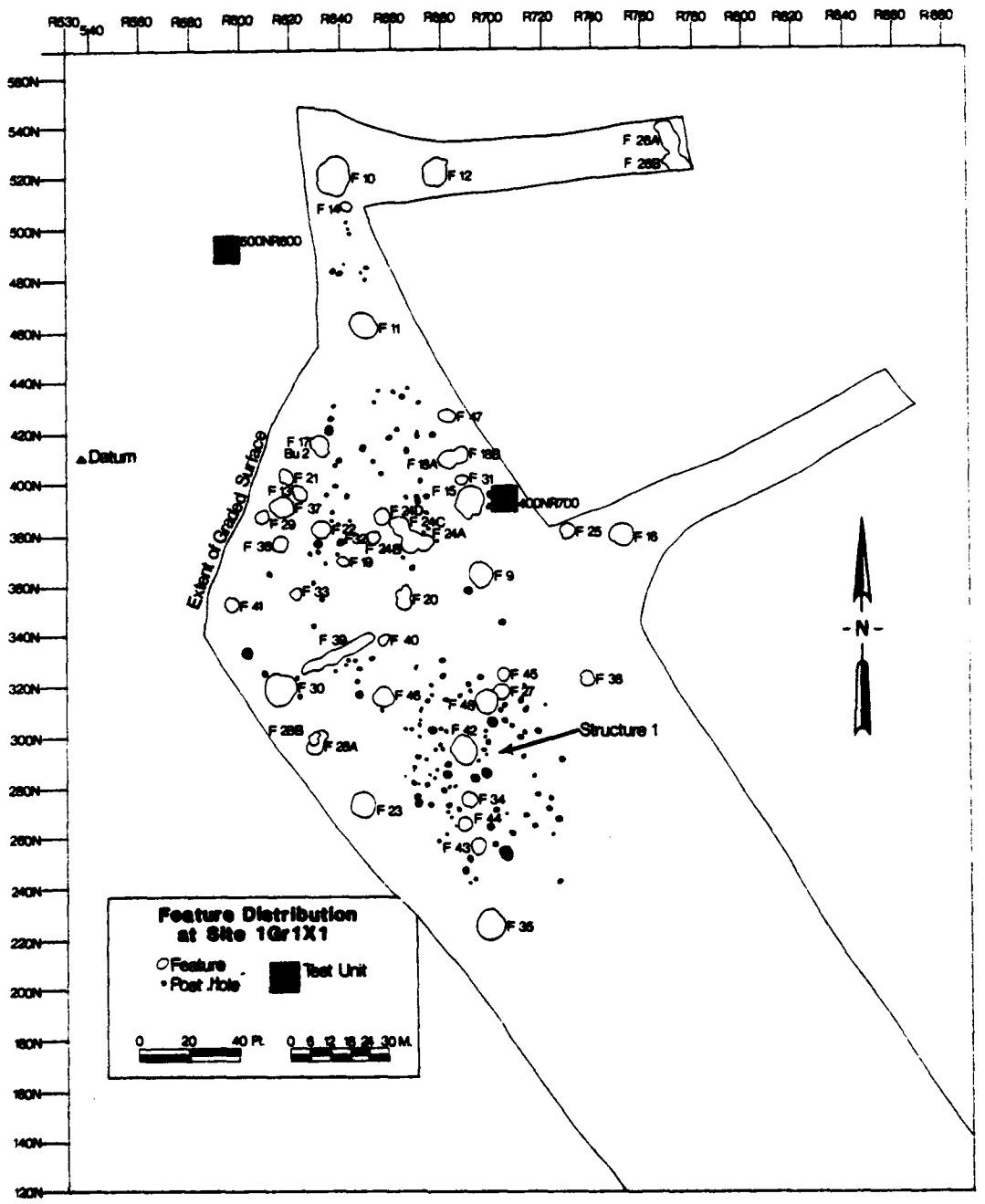

PICKENSVILLE
ALICEVILLE LOCK & DAM
ALICEVILLE
N
COCHRANE ACCESS AREA
SIPSEY RIVER ACCESS AREA
VIENNA ACCESS AREA
BARNES BEND ACCESS AREA
CHAMA BLUFF ACCESS AREA
RIVERSIDE PARK PUBLIC ACCESS AREA
GAINESVILLE LOCK & DAM
GAINESVILLE
CLINTON
GAINESVILLE LAKE AREA
ARCHAEOLOGICAL SURVEY
Archaeological Sites
Steamboat Wrecks
Mussel Beds
Feet
Kilometers

Figure 2.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420N
400N
380N
360N
340N
320N
300N
280N
260N
240N
220N
200N
180N
160N
140N
120N
Datum
Extent of Graded Surface
500NR600
400NR700
F 10
F 12
F 14
F 26A
F 26B
F 11
F 47
F 17
Bu 2
F 18A
F 18B
F 21
F 31
F 15
F 37
F 29
F 24D
F 24C
F 24A
F 24B
F 25
F 16
F 38
F 19
F 9
F 33
F 20
F 41
F 39
F 40
F 45
F 36
F 30
F 46
F 49
F 27
F 42
F 28B
F 28A
Structure 1
F 23
F 34
F 44
F 43
F 35
N
Feature Distribution
at Site 1Gr1X1
Feature
Post Hole
Test Unit
0 20 40 Ft.
0 6 12 18 24 30 M.

Figure 3.

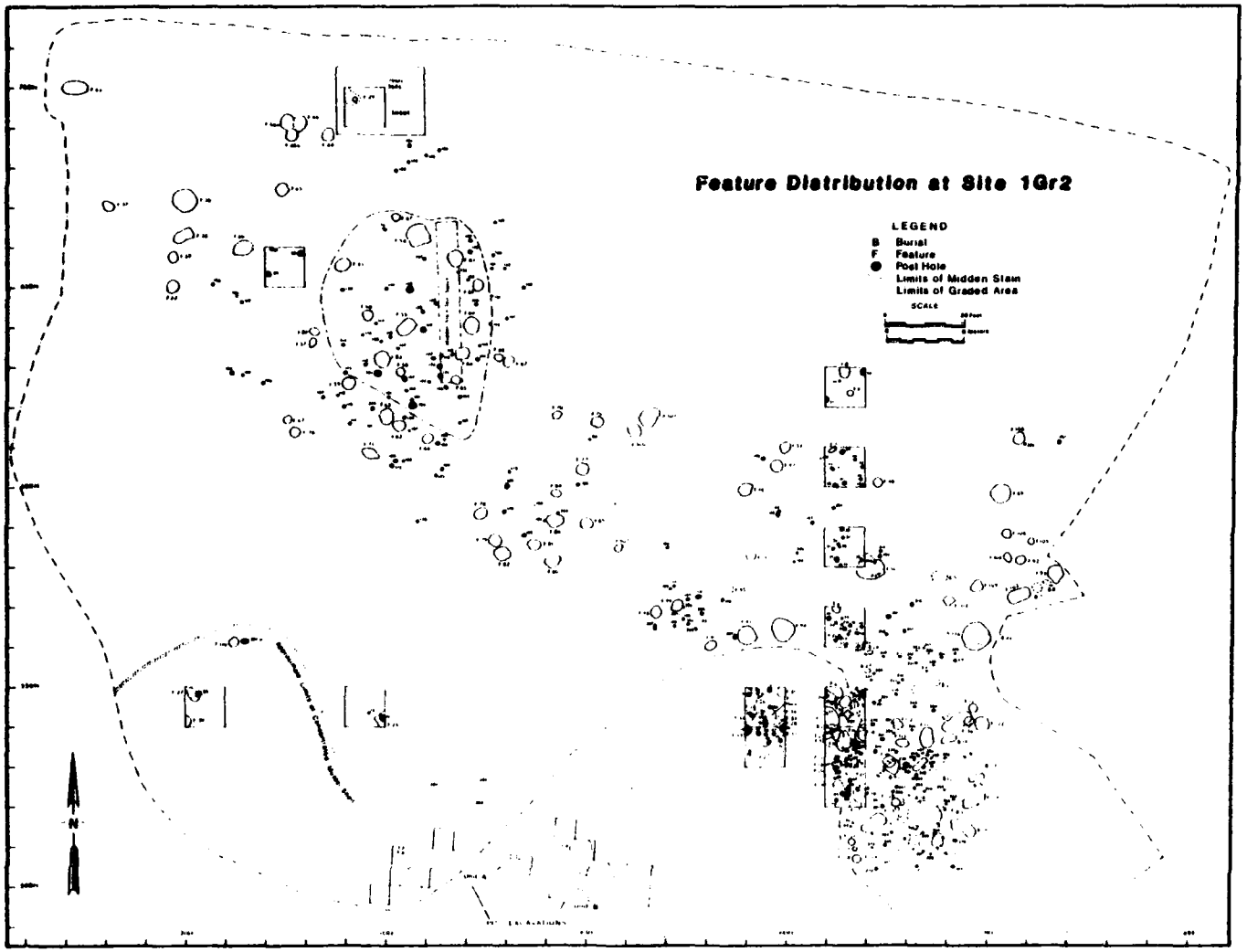

Feature Distribution at Site 1Gr2
LEGEND
B Burial
F Feature
Post Hole
Limits of Midden Stain
Limits of Graded Area
SCALE
N

Figure 4.

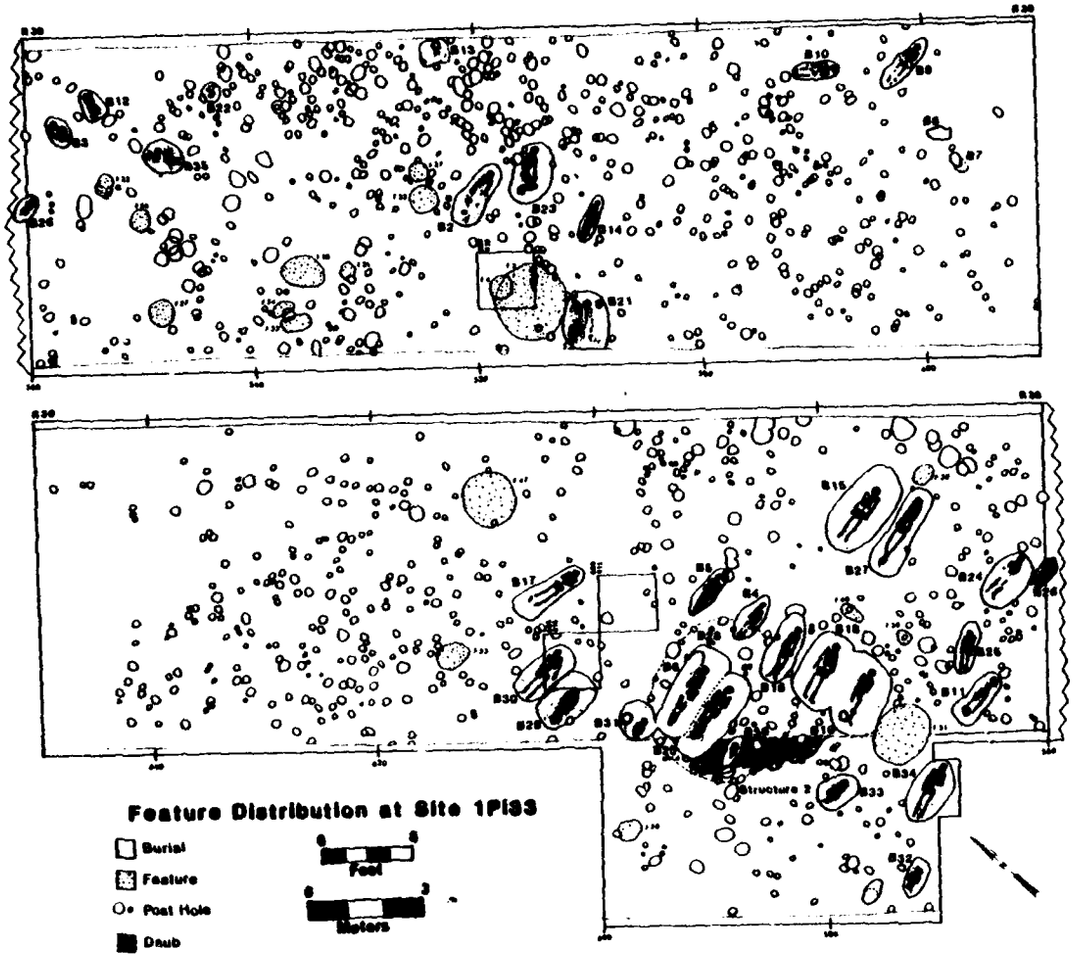

Feature Distribution at Site 1PI33
Burial
Feature
Post Hole
Daub
Feet
Meters
Structure 1

Figure 5.

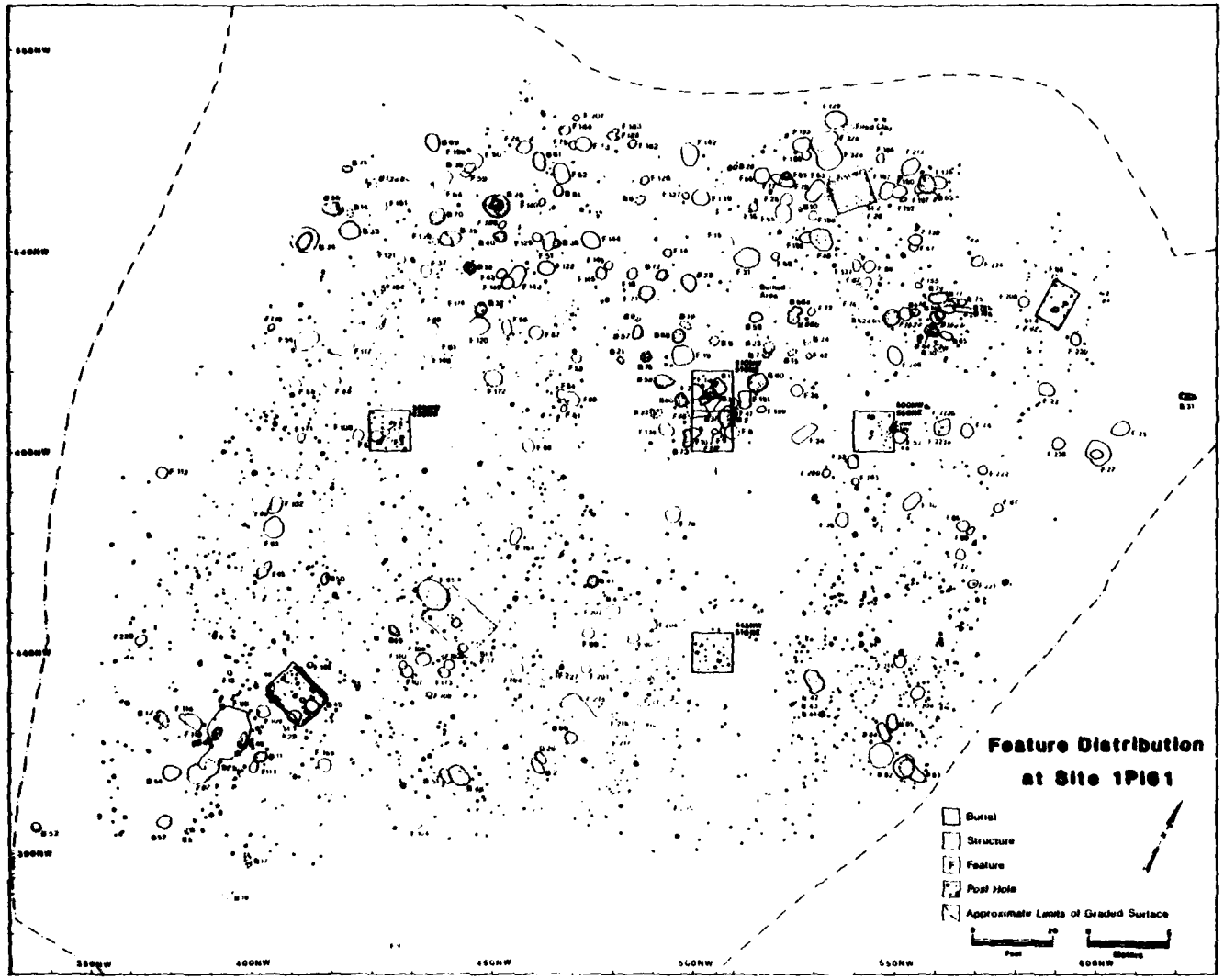

Feature Distribution
at Site 1Pl61
Burial
Structure
Feature
Post Hole
Approximate Limits of Graded Surface

Figure 6.

ber of selected contexts were also waterscreened through one-sixteenth inch mesh. Soil and pollen samples for botanical analysis were saved from all contexts. A representative sample from the various phases and subphases was subsequently floated and analyzed. A large sample of faunal remains from features representative of the various phases and subphases as well as those from stratified contexts, was also analyzed. All burials were carefully uncovered, drawn, photographed, and subsequently analyzed and described. The temporal position or cultural affiliation of all contexts at each site has been dated using a relative ceramic or lithic chronology which was tied to absolute time by a series of 18 radiocarbon dates (Jenkins 1981:34, Table 1).

The material recovered from the Gainesville Lake area is, unfortunately, not throughly representative of the entire prehistoric continuum. To some degree this is the result of changing settlement and demographic patterns. Cultural remains were most sparse during the Paleo-Indian and Archaic stages. Stratified Archaic components with relatively sparse cultural material were found at Sites 1Gr2, 1Gr1X1 and 1Gr50. Middle and Late Gulf Formational components, found at practically all sites, are small and seem to have been about the same size as the Late Archaic components. During the Middle Woodland Miller I phase, the first base camps appear in the Gainesville Lake area. From the later part of the Miller II phase throughout the remainder of lake area prehistory, components are more numerous and well represented.

This volume deals primarily with the Archaic, Gulf Formational and Woodland stages, with major emphasis placed on change during the Woodland stage. The Mississippian stage summary is less extensive since fewer Mississippian materials were recovered. The protohistoric period will not be dealt with because The University of Alabama's Gainesville project recovered only a few artifacts dating to this period.

CHAPTER II

TERMINOLOGY

One of the primary goals of this study has been to document local change through time. In order to do this, the major classes of data; ceramics, lithics, flora, fauna, human osteology, and nonportable features from each phase and time period were thoroughly analyzed. Another goal of this study was to view these data within a regional, and in some cases a subareal, perspective to better understand the processes involved in the sequential development of the cultural systems within the central Tombigbee Valley. To accomplish these goals, it was necessary to arrive at a set of basic unit concepts and integrative taxons. This step was crucial for logically presenting and interpreting the local data within a panregional framework. The terminology used in any study is of primary importance because it colors and amplifies the message. The terms used in this study were adapted from concepts defined by Willey and Phillips (1958). Some have been further explicated by Krause (1977:5-14). The more frequently used taxons appearing in this report are reviewed here.

STAGE

Stages are essentially developmental units. Stages are generally free from strict limitations of space and time and are founded on common participation in important traditions. Although stages and cultural developments have some temporal dimensions, these are not necessarily uniform for all localities or regions of an area. The criteria for defining stages are essentially technological and economic ones and refer to changes in artifact traditions and subsistence technologies. To a lesser extent stages reflect social and political organization or development (Willey and Phillips 1958:64-73).

PERIOD

Periods are essentially chronological units. According to Willey and Phillips (1958:28): ". . . they are theoretically not spatially limited; they may be extended indefinitely." Periods are defined less by content and have a greater emphasis on the temporal dimension. In this study, the period is the chronological device that in effect divides stages into temporal units. Stages and periods are composed of phases. The period, then, can be a useful device for comparing and discussing phases of similar temporal duration that may be widely separated in space. For this reason periods should not be confined to a single drainage system. The terms Marksville and Baytown, for example, have been used as period designations in the lower Mississippi Valley (Phillips 1970) and Miller I, Miller II, and Miller III, have been used as period designations in the Tombigbee River Valley (Rucker 1974, Blakeman 1975, Blakeman et al. 1976, Atkinson et al. 1980). The period is a much more useful integative device when it covers a larger area. Hence the term Middle Woodland should be

used in the place of Marksville, Miller I, and Miller II. Late Woodland should be used in the place of Miller III and Baytown (Fig. 7).

PHASE

Phases are the building blocks of periods and stages. Willey and Phillips (1958) define the phase as:

> . . . an archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of a locality or region and chronologically limited to a relatively brief interval of time (Willey and Phillips 1958:22).

Krause (1977:8) explains, "It is clear from this characterization that phases are heavy on the dimension of content, lighter on the dimensions of time and space."

SUBPHASE

Since the definition of the central and upper Tombigbee River Valley regional phases (Jenkins 1975a, Jenkins et al. 1975), extensive excavations, refined analysis, and other continued research have made it imperative to refine the temporal sequence. Consequently, a sequence of subphases has been defined that temporally subdivides the previously defined phases. The subphase is defined as a finer temporal subdivision than the phase with more specific content. The earlier phase designations are also retained since they are operationally useful in sequence and area correlations.

VARIANT

The variant was initially defined by Donald Lehmer (1971:32) for use in the Middle Missouri Plains area as, ". . . a unique and reasonably uniform expression of a cultural tradition which has a greater order of magnitude than a phase, and which is distinguished from other variants of the same tradition by its geographic distribution, age, and/or cultural content." Krause (1977:10) further explains the variant as, ". . . a mid-range taxon which has less content, greater time span and greater spatial spread than a phase, but less time than a tradition and less spatial spread than a horizon." The use of the term variant in this report is consistent with these definitions. The emphasis most important in this study, however, is that a variant is characterized as a series of phases related by similar content, and by spatial and temporal continuity. The term variant essentially replaces the archaeological culture previously used by this author (Jenkins 1981) and by Phillips (1970). Taxa such as Marksville culture, Baytown culture, Miller culture are referred to as variants in this report. This change in terminology is appropriate because it is doubtful that these archaeological constructs corresponded to actual cultural groups. Here the variant serves as an integrative concept

Suggested Cultural and Chronological Nomenclature for the Central Tombigbee Drainage

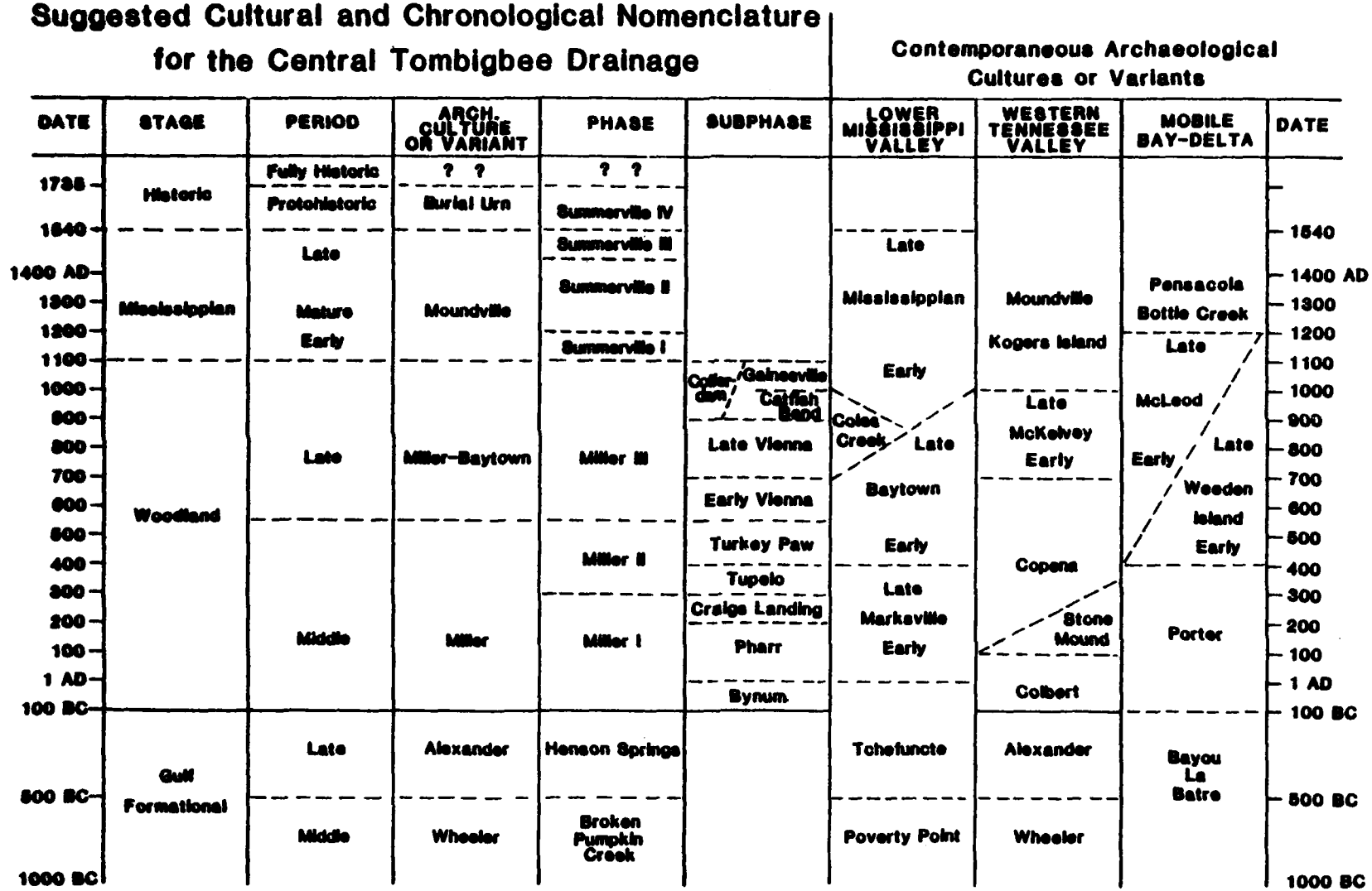


Figure 7.

for organizing data, but it does not preclude the possibility that some of these variants did correspond to prehistoric cultural or linguistic groups.

COMPONENT

The term component in this report is the same as defined by McKern (1939:308) and Willey and Phillips (1958:21-22). Essentially, a component is the local manifestation of a given archaeological unit (focus, phase, or subphase) at a specific site. The component is the basic building block of the other unit concepts. The definition of components, therefore, is one the more crucial steps of archaeological inquiry and explanation. If the formulation of components is incorrect then subsequent studies of cultural process will be weak or meaningless. The term component is practically synonymous with Dunnell's definition of occupation (Dunnell 1971:202).

COMMUNITY

Ideally, the social equivalent of the component is the community. Murdock (1949:70) defined a community as a ". . . maximal group of persons who normally reside together in a face-to-face association." It is usually difficult for the archaeologist to determine if a defined component does represent a community. Often a group of artifacts or features on which a component definition is based could be the result of several temporally distinct occupations that produced similar artifacts. The archaeologist's ability to define a community depends on the precision of his chronology.

COMPLEX

The concept of an artifact complex in this study is essentially that used by Phillips (1970) and defined by Spaulding:

> The ideal unit of archaeological study is the assemblage of artifacts produced and used by a single society over a period of time short enough to preclude any marked changes through cultural innovations or shifts in relative popularity of attributes or attribute combinations (Spaulding 1960:61).

The complex comprised the primary basis for defining components, subphases, or phases in this study.

ASSEMBLAGE

A distinction has been made between complex and assemblage in this study. As used by Phillips (1970:30) the ceramic complex is the sum total of types, varieties, and modes associated together in an archaeological context. Often the content of a feature may fall within a given complex but does not necessarily comprise the whole complex, or it may contain an

admixture of an earlier artifact complex. This is a common circumstance on intensively occupied sites where pits were dug prehistorically through earlier middens. When the pit was later filled with material contemporary with the life of the pit, earlier artifacts were usually mixed with the more recent material, forming what we refer to as an assemblage. The artifact complexes can be isolated from these assemblages by repeated comparisons of stratified components and seriation techniques.

TRADITION

According to Willey and Phillips (1958:37), "An archaeological tradition is a (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms." As discussed by Krause (1977:9) the tradition has more time than a phase or a horizon, less content than a phase, and less space than a horizon.

HORIZON

Willey and Phillips (1958:33) define a horizon as, ". . . a primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread." As further discussed by Krause (1977:9), a horizon has more space than a tradition or a phase, less time than a tradition, and less content than a phase.

CERAMIC SERIES

The term series was initially defined by Sears and Griffin (1950:1) as ". . . a group of pottery types which occur on the same ware and which are the product of a cultural group at a particular period of time." A refinement of this definition is offered here. The term series has been used in this study as a group of decorations and/or surface treatments that consistently appear on the same ware during a relatively brief interval of time. A series may be comprised of morphologically related complexes of varying percentages of the same types. The term series is most useful for referring to a group of related, roughly contemporaneous complexes composed of the same types over a broad contiguous area. In this sense, the ceramic series becomes useful in the definition of variants.

CHAPTER III

PALEO-INDIAN AND ARCHAIC STUDIES IN THE GAINESVILLE LAKE AREA

H. Blaine Ensor

INTRODUCTION

A synthesis of the extant archaeological knowledge of Paleo-Indian and Archaic cultures in the Gainesville Lake area (ca. 10,000 to 1,000 B.C.) is presented in this chapter. In this summary, particular interest is paid to terminological clarity and new interpretations that can now be made in light of the Gainesville Lake area excavations. Data from the Gainesville Lake area is discussed with reference to chronological markers for the Paleo-Indian and Archaic stages. Technology, subsistence, site types, site distributions, and social inferences are made for each of these stages where the data is available. These materials are further considered from a regional perspective in a later section of this chapter.

The question of a preprojectile point cultural tradition (Krieger 1964, Willey and Phillips 1958, and Adovasio et al. 1978) and the relationship of the central Tombigbee pebble tools to the Lively complex (Lively 1965) of northwest Alabama are considered briefly in the regional summary section. No preprojectile point data from the Gainesville Lake area was recovered.

Environmental conditions and cultural adaptations defined in earlier studies for the Paleo-Indian and Archaic stages are reviewed in the first section of this chapter.

ENVIRONMENT AND CULTURAL ADAPTATION

Models for the interpretation of hunting and gathering cultures in the Eastern Woodlands and the Southeast have generally incorporated Wissler's (1926), White's (1949), and Steward's (1955) observations on the close relationship of environment and technology. This technoenvironmental paradigm has received interest in grand scale studies made by Griffin (1960, 1961) in the Great Lakes region. Caldwell (1958) and Cleland (1976) have presented environmental and technological models that place hunter and gatherer adaptations to deciduous forest environments in diachronic perspective. Lewis and Lewis (1961) suggested a close correspondence of the initial occupation of the Tennessee River Valley shell middens in northern Alabama and western Tennessee with the Hypsithermal, a major climatic regime.

Within the Tombigbee Valley, Muto and Gunn (1981) have conducted an ambitious program to determine the physical associations of hunter and gatherer populations and the natural environment using oscillations in climatic patterns and resultant geomorphological features to predict early man site locations within the central and upper Tombigbee drainage.

Muto and Gunn (1981) further suggest several periods of homeostatic and heterostatic environmental conditions in the central and upper Tombig-

bee drainage and they hypothesize cultural responses to changing environmental conditions which extend over 12,500 years. Much of this environmental correlation work is speculative because data needed to rigorously test such models are insufficent at the present time. The Gainesville Lake area excavations provide the data base that may be extended eventually to test culture-environment hypotheses generated from these models. Interpretations of the relationship between early environment and culture in the central Tombigbee drainage are currently restricted by incomplete knowledge of prehistoric sequences and the lack of environmental data.

PALEO-INDIAN STAGE
(10,000 B.C. - 8000 B.C.)

Introduction

The Paleo-Indian stage, documented by Griffin (1952), Willey (1966), and others, is the most widely distributed cultural development in North America. The Paleo-Indian stage was characterized technologically by the presence of fluted projectile points and other distinctive tool forms such as uniface side and end scrapers, burins, flake-blade knives, drills, choppers, gravers, utilized blades, spokeshaves, and splintered wedges or pieces esquillees (MacDonald 1968, Dragoo 1973, Williams and Stoltman 1965, and Wilmsen 1968). There is abundant evidence for a blade technology during the Paleo-Indian stage.

Walthall (1980), in his recent synthesis of Alabama archaeology, noted that Paleo-Indian manifestations are recognized primarily by the fluted and unfluted hafted biface Clovis, Cumberland, Quad, and Beaver Lake projectile point/knife types. Early and late Paleo-Indian periods are distinguished partially on evidence recovered by Clayton (1965) and Hubbert (n.d.) and partially on technostylistic grounds. Futato (1979) indicated that the Clovis projectile point and its varieties properly fall into the early Paleo-Indian period, ca. 10,000 to 9000 B.C. The fluted Cumberland and unfluted Quad and Beaver Lake types belong to the late Paleo-Indian period, ca. 9000 to 8000 B.C. These dates are extrapolated from other areas because no radiocarbon dates for the Paleo-Indian assemblages are available from the Southeast.

Evidence for Paleo-Indian occupation of the Gainesville Lake area or even the Tombigbee drainage prior to the current investigations was limited to one Paleo-Indian site identified in the upper Tombigbee drainage by Mahan (1956). This site consisted of surface finds similar to those in the adjacent Tennessee Valley region.

Paleo-Indian stage specimens in the Gainesville Lake area are limited to four sites. Sites 1Gr1X1, 1Gr113, 1Pi38, and Site 1Pi61 have produced early to late Paleo-Indian projectiles or blades. Tools associated with Paleo-Indian occupations in the Gainesville Lake area included fluted points, large blades, and gouges or adzes.

Technology and Subsistence

Paleo-Indian tools are similar throughout their spatial and temporal distribution. Goodyear has pointed out that:

> The widespread existence of distinctive Paleo-Indian chipped stone technologies has been recognized in North America for decades. Great attention has been paid to the striking homogeneity of tool forms within these technologies over time and space and the high standards of craftmanship involved in the production of the characteristic bifacial and unifacial tools (Goodyear 1979:1).

Isolated single fluted projectile points were recovered from Sites 1Gr1X1, 1Gr113, 1Pi38, and 1Pi61. All of these were manufactured from nonlocal siliceous stone, probably from the Coastal Plain of South Alabama or Mississippi. A fluted projectile point basal fragment made of Tallahatta quartzite was recovered from a test unit at Site 1Gr1X1. A large fluted specimen and an adze or gouge manufactured from Coastal Plain agate were recovered from the surface of Site 1Pi38. Other Paleo-Indian projectile points, a Beaver Lake and a residual triangular with a rudimentary flute, were recovered from the surface of Site 1Pi38. Both of these projectile points were made of local apparently unheated yellow chert. Another fluted projectile point, made of Coastal Plain agate, was recovered from the surface at Site 1Gr113. A large blade, manufactured from the same material as the fluted projectile point from Site 1Pi38, was recovered from the lower most clay zone at Site 1Pi61.

These limited data support, to a limited extent, Goodyear's (1979) and Gardner's (1977) views on the use of cryptocrystalline materials during the Paleo-Indian stage. Goodyear (1979:1) has remarked that, "Equally impressive as the emphasis on consistency in tool forms . . . is the remarkable uniformity in the selection of cryptocrystalline and microcrystalline siliceous rocks as a raw material base for tool manufacture." The fluted Paleo-Indian projectiles from the Gainesville Lake area reflect patterned selection for siliceous raw materials. This pattern has been observed over most of the Eastern Woodlands. The nonfluted Paleo-Indian projectile points, however, were made from local Tuscaloosa formation river gravels. The exact source of this local material is difficult to determine because of the variation in gravel size and the heterogeneity and extensive range of the Tuscaloosa formation gravels. The reason for this apparent shift from the use of exotic stone to the use of local materials is not clear.

Willey (1966), Williams and Stoltman (1965) and MacDonald (1968) have suggested that Paleo-Indian subsistence was based on a highly mobile hunting and gathering economy. Paleo-Indian dependence on megafauna has been the subject of some debate. Extinct Pleistocene mammalian fossils are common in the Southeast (Brain 1971, Curren 1977). The evidence for the association of man with these fossil remains, however, is slim. Paleo-Indian tool kits in the eastern United States are similar to those found in the western United States where hunting large mammals was common (Haynes 1969, Willey 1966). Paleo-Indians were gatherers as well as hunters. The emphasis these groups placed on hunting or gathering is the

focal point of controversy discussed by Smith (1976). Wild fruits, tubers, and other plants contributed to Paleo-Indian subsistence. Because evidence of Paleo-Indian occupation is restricted to isolated finds, no subsistence information was obtained for the Paleo-Indian occupation in the Gainesville Lake area.

Site Types, Site Distribution, and Social Inferences

Both Gardner (1977) and Goodyear (1979) infer mobility related to resource exploitation from the Paleo-Indian use of exotic siliceous stone. The Gainesville Lake area distribution of Paleo-Indian components tends to support this hypothesis. Paleo-Indian groups either traveled some distance or maintained trade relationships to obtain quality materials. The scattered finds of lanceolate Paleo-Indian projectile points and other tools within the Gainesville Lake area suggest that the population density was low and occupations were limited.

Paleo-Indian site types in the Gainesville Lake area are incompletely documented. Briefly occupied encampments include evidence of both hunting and concurrent gathering of plant resources. A Coastal Plain agate adze or gouge was recovered from the surface of Site 1Pi38 in the general vicinity of a fluted Clovis projectile point made of the same material. The adze had apparently been reworked from a core--suggesting woodworking or scraping and planing activities at this site.

The distribution of Paleo-Indian sites reflects a preference for access to riverine and floodplain environments. Sites 1Gr1X1 and 1Pi61 are located on first alluvial terraces immediately above the surrounding floodplain and near old river channels or stream junctures. Site 1Pi38 was located on a terrace remnant or levee in the floodplain close to an old river channel. These site locations suggest that access to aquatic resources and wetlands was an important consideration in Paleo-Indian site selection.

Practically nothing is known of the Gainesville Lake area Paleo-Indian social organization or group relationships. The presence of nonlocal siliceous materials in the tool kits does suggest that the Gainesville Lake area Paleo-Indians acquired these materials directly or through exchange with neighboring groups. Current evidence indicates that this nonlocal material was procured at its source by seasonally mobile small hunter and gatherer groups. Because the natural distribution of quality siliceous materials is limited, contact with groups outside the central Tombigbee drainage seems likely. Gainesville Lake area Paleo-Indian groups probably were composed of small bands. The sites suggest limited activities performed by small task groups.

ARCHAIC STAGE
(8000 B.C. - 1000 B.C.)

Introduction

The term Archaic, first used by Ritchie (1932) to distinguish early cultural manifestations in New York state, has since been used by Griffin (1952), Lewis and Kneberg (1947), Webb and Dejarnette (1942), Dragoo (1958), Willey (1966), and others to describe preceramic groups primarily from large shell mound sites in the Southeast and Mid-West. The Archaic is now almost universally accepted as a major developmental stage in North America. Willey and Phillips (1958:107) define the Archaic as, ". . . the stage of migratory hunting and gathering cultures continuing into environmental conditions approximating those of the present." Other criteria used to define the Archaic include the absence of horticulture, the introduction of ground and polished tools, and the absence of pottery.

In a recent synthesis of Alabama archaeology, Walthall (1980:38) stated, "Most of the definitions of the Archaic currently in use place emphasis on three factors: adaptation, time, and technology." Recognition of an Archaic stage of development is dependent on these three factors and on the recognition of culture boundaries or style zones, particularly during later periods. Walthall (1980) summarized these developments:

> Recent investigations of stratified rock shelters and open air sites in eastern North America have indicated that the Archaic stage began nearly 10,000 years ago and ended some 7,000 years later. This long cultural sequence has been traditionally divided into three sequential periods. The first of these temporal segments, the Early Archaic period, is characterized by notched and stemmed projectile points, uniface flake tools, and, in northern Alabama, by a more intensive utilization of rock shelters as habitation sites. This initial Archaic period dates from approximately 8,000 to 6,000 B.C. The following period, the Middle Archaic, dating from 6,000 to 4,000 B.C., is characterized by the appearance of ground and polished stone implements; a wide variety of bone tools; flexed burials, often accompanied by mortuary goods; and the first major occupation of riverine shell middens. In Late Archaic times, there were many innovations, including the development of limited spectrum economies based upon a few high-yield natural foods, and the earliest cultivation of native annuals. This final period in the Archaic sequence dates from 4,000 B.C. to the diffusion of Gulf Formational pottery into the Alabama region (Walthall 1980: 38-40).

These basic formulations and others such as increased residential stability and complexity of material culture serve as traditional markers for the Archaic.

Early Archaic Period
(8000 B.C. - 6000 B.C.)

Gainesville Lake area Early Archaic components were found at Sites 1Gr1X1 and 1Gr2. The transitional Dalton culture has been somewhat arbitrarily placed in the Early Archaic period. Most Dalton radiocarbon dates fall within the post-Pleistocene or Holocene epoch (ca. 8000 to 7500 B.C.). The basic Dalton tool kit remains very similar to the preceding Paleo-Indian tool assemblages. Subsistence patterns may reflect adaptation to a climate more like that of today.

The best assemblages available from the Gainesville Lake area Archaic stage are from the post-Pleistocene period. Sterile alluvial sands covered much of the Early Archaic assemblages at Sites 1Gr1X1, 1Gr2, and 1Gr50.

Early Archaic occupations in the Gainesville Lake area are sparse. High mobility is indicated by the presence of Tallahatta quartzite. Jenkins and Curren (1976:13) interpreted the Gainesville Lake area Archaic lithic assemblages and limited plant remains (hickory nut shell) as evidence of a mobile hunting and gathering economy and suggested a restricted wandering type of settlement system similar to that described by Beardsley et al. (1956).

Technology and Subsistence

Sites 1Gr1X1 and 1Gr2 yielded the best Early Archaic data for the Gainesville Lake area. A limited Early Archaic sample stratigraphically separated from later occupations was obtained from these sites. An Early Archaic component is suggested at Site 1Gr50 by beveled and serrated projectile point fragments in Levels 4 through 7 (Ensor 1981:185). Site 1Pi38, a possible single component Dalton occupation located some distance from the waterway, was not excavated but the surface collections provided substantial Early Archaic data.

Ensor (1980:85-87) has summarized the basic Early Archaic basic tool kit recovered from Sites 1Gr1X1 and 1Gr2. Dalton and Kirk occupations were represented in early horizons at these sites (ca. 8000 to 6500 B.C.). These early lithic technologies were characterized by the use of a bipolar reduction technique on local unheated Tuscaloosa gravels and the use of exotic or heated Tuscaloosa chert for the manufacture of projectiles and certain other specialized tools, but not for Dalton projectile points.

The earliest incidence of the bipolar flaking technique is associated with the Dalton culture. The bipolar reduction of cobbles and pebbles into tools such as splintered wedges or pieces esquillees was common. Local unheated cobbles were also reduced by bipolar techniques to produce unfacial adzes or scraper planes and heavy duty choppers or cleavers. Blades and blade-like flakes resulting from the bipolar technique are common debitage. Uniface hafted end scrapers are common and were generally made on expanding flakes, blade-like flakes, or true blades. Perhaps the most abundant bifacial implement recovered from the Dalton tool kit is the Dalton projectile point itself. Various stages in Dalton resharpening

produced heavily serrated blade edges. Other Dalton flaked lithic forms include preforms for Dalton projectile points, various types of bipolar cores, nonbipolar cores, utilized blades and flakes, flake scrapers, pebble scrapers, and choppers. Pecked and ground stone implements include hammerstones and anvil stones.

Kirk horizons contain much of this same inventory and bipolar flaking continues to be the basic technique used for the manufacture of tools from local lithic sources. A major distinction between the Dalton and Kirk biface technologies is the apparent use of local unheated or slightly heated Tuscaloosa gravel to manufacture Dalton projectile points, but heated Tuscaloosa chert and nonlocal Tallahatta quartzite were used to manufacture Kirk projectile points. Other than this technological change, there is little difference between these early tool inventories.

Ensor (1980, 1981a) points out that variations in cobble core morphology account for most assemblage diversity at the Gainesville Lake area sites. Various flake and blade tools were also common, however. Tasks using this generalized tool inventory could include hunting, butchering and processing, wood working, bone processing, and various other maintenance tasks. Little or no biface manufacture is represented although preforms are minimally represented in the tool inventories. The tool kits appear to represent extractive tasks and adzes or scraper planes used for wood working are common. The site distribution of these tools suggest that small groups occupied the sites for restricted periods.

Little is known of actual Dalton or Kirk subsistence practices. No faunal material and limited plant remains were recovered from these contexts. Both Caddell (1981a) and Smith (1975) indicate that hickory nut shell is by far the most prevalent plant remains found in the Early Archaic levels. As Jenkins and Curren (1976:13) point out, the abundant nut shell in these contexts may imply both hunting and gathering tasks because many faunal species congregate near nut producing trees during the late fall months. An Archaic pit from Site 1Pi61 contained both a Kirk Corner Notched projectile point and a predominance of hickory nut shell and acorns. A single persimmon seed was also recovered from this pit (Caddell 1981a). The presence of these plant species may suggest a late fall Kirk occupation at this site.

Site Types, Site Distribution, and Social Inferences

The Early Archaic sites, like the suceeding Middle Archaic and Late Archaic sites, seem to represent extractive encampments of groups that exploited the riverine environments. The small concentrations of chipped stone materials in the alluvial sands at Sites 1Gr1X1 and 1Gr2 suggest a limited range of activities. There is still no evidence of a base camp settlement in the Gainesville Lake area during this time period. Larger excavations are needed to obtain statistical samples of these buried components. The environmental distribution of the early sites is practically the same as later Archaic sites. The Early Archaic sites, however, are even more oriented toward a floodplain adaptation. Muto and Gunn (1981) have developed specific site location models from paleoenvironmental and geomorphological studies for early and later Archaic time periods. They

suggest that the pattern of Early Archaic site location is comparable to other areas in the Southeast. The first terraces where the Early Archaic components were found were, in all probabilty, located within the floodplain at the time of their habitation some 8000 to 10,000 years ago.

The size and distribution of these sites suggest small group occupations perhaps by conjugal or extended families. These small groups were evidently quite mobile. Nonlocal materials were used in the manufacture of certain stone tools after Dalton times. A band level of social organization, with no status differentation except along age and sex dimensions, is suggested by the Early Archaic site data.

Middle Archaic Period
(6000 B.C. - 3000 B.C.)

Jenkins and Curren (1976:4) in their summary of Gainesville Lake area chronology, subsistence, and settlement patterns conclude that, "At the time of this writing few artifacts assignable to the Middle Archaic period have been found suggesting infrequent occupations and a very low population density." James Atkinson (1974), however, had tested the large Vaughn Mound site and found Archaic burials in a stratified context radiocarbon dated to late Middle Archaic times.

One problem in determining the presence and extent of Middle Archaic occupation within the Tennessee-Tombigbee Waterway, as in all areas of the Southeast, is that the Morrow Mountain horizon has been the only recognized hafted biface dating to this time period (Coe 1964). Walthall (1980) summarized the problem:

> . . . a major trend that clearly accelerated during the Middle Archaic was increased territoriality and population growth resulting in much regional stylistic diversity. This in turn produced a proliferation of projectile point styles, including the abundant undifferentiated straight and expanded-stem Archaic types. In many cases, thousands of these diagnostic projectile points have been lumped into provisional catagories, again impeding comparative study. This is the result, in large part, of the failure of many archaeologists working in various places at various times to isolate distinct Archaic assemblages (Walthall 1980:58).

The lack of comparative conceptual categories for diagnostic materials has undoubtedly impeded research. But archaeologists have also been greatly hampered by lack of stratified components which would impart chronological significance to morphological categories. In instances where stratigraphic data is available, the Morrow Mountain and perhaps Eva projectile point types are the ones present, and these types are therefore designated as Middle Archaic types (Cridlebaugh 1977).

Other diagnostic lithic forms that could potentially date to the Middle Archaic have been found at the Stanfield-Worley Bluff Shelter (DeJarnette et al. 1962) where White Springs and Crawford Creek projectile points were found in association with Morrow Mountain projectile points.

Faulkner and McCollough (1973) have discussed the relationship of the Sykes-White Springs projectile point to other Middle Archaic forms and observed that the Sykes-White Springs form is common at Morrow Mountain sites.

Within the Gainesville Lake area the Middle Archaic projectile points did not fit the traditional Morrow Mountain typology; virtually no Morrow Mountain projectile points were recovered. Two other types, the Vaughn and Demopolis, resemble other Archaic forms such as Sykes-White Springs. The Vaughn projectile point, named for the Vaughn Mound (Atkinson 1974) has a broad haft element and is almost exclusively manufactured from Tallahatta quartzite in the Gainesville Lake area (Ensor 1980). Demopolis projectile points, similar to Vaughn types, have a high incidence of transversely fractured haft elements (Ensor 1980). Both of these forms may be related to Sykes-White Springs, Morrow Mountain, Denton, and Opposum Bayou. Connaway (1977) first defined the Denton projectile point type at the Denton site, a late Middle Archaic site in the northern Yazoo Basin of Mississippi. The Denton, Opposum Bayou, Vaughn, and Demopolis projectile points appear within a widespread Gulf Coastal Plain Archaic tradition dating from approximately 6000 to 3000 B.C. Documentation of Middle Archaic habitation in the Gainesville Lake area was severely hampered by small excavations, survey limitations, and the lack of previous work in the area.

Technology and Subsistence

Two stratified sites in the Gainesville Lake area, Sites 1Gr1X1 and 1Gr2, permit several inferences concerning Middle Archaic habitation. Although no specific Middle Archaic assemblage was isolated, several trends are apparent.

Perhaps the most significant information obtained from the excavation of these sites was the identification of the Vaughn var. Vaughn (Atkinson 1974, Ensor 1980) and the Demopolis var. Demopolis projectile points as Coastal Plain expressions of the Middle Archaic horizon. Nonlocal Tallahatta quartzite was used in the manufacture of hafted bifaces. The local lithic technology was a continuation of preceding Early Archaic technology with minor exceptions. The use of local Tuscaloosa gravel and the bipolar technique of cobble reduction apparently persisted throughout the Archaic. Little more is known of the subsistence technology from excavation data in the Gainesville Lake area. The tool kit appears to include a variety of scrapers, knives, drills, choppers, adzes, spoke shaves, hammer and anvil stones, and various other ground and polished stone tools and ornaments. Most of these tools were recovered from the intermediate levels at Sites 1Gr1X1 and 1Gr2. Separation of earlier from later Archaic components was not possible at these sites.

Site Types, Site Distribution, and Social Inferences

Middle Archaic occupation in the Gainesville Lake area appears to be restricted to semipermanent or transitory encampments. Three major Vaughn components were excavated at Sites 1Gr1X1, 1Gr2, and 1Pi61. All three of

these sites represent transitory encampments that Jenkins and Curren (1976) equate with central based wandering type of settlement system (Beardsley et al. 1956). A central based wandering settlement pattern results as a population moves about through the year but consistently returns to a central base camp. Jenkins and Curren (1976) observed that this type of settlement system persisted throughout the Late Archaic period. Atkinson's (1974) radiocarbon dates from the Vaughn mound, however, indicated that these occupations should more appropriately be placed within the late Middle Archaic time period, between 4000 and 3000 B.C.

The absence of substantial Middle Archaic middens at Sites 1Gr1X1, 1Gr2, and 1Pi61 and in the surface survey of the Gainesville Lake area, suggest that either Middle Archaic peoples were moving to base camps such as Vaughn outside the lake area, or the local base camps were not detected. That base camps were not detected seems most plausible. A large primarily Archaic accretional mound at Site 1Pi65 was outside the impact zone (T. Kimbrell, personal communication 1981). Large Middle Archaic sites south of Demopolis, Alabama were deeply buried under meters of alluvium (C.B. Curren, personal communication 1977; N.J. Jenkins, personal communication 1981). Survey bias resulting from the location of Waterway impact areas may be responsible for the absence of recorded Middle Archaic base camps in the Gainesville Lake area. The recognized Middle Archaic sites were found on the first alluvial terraces overlooking the floodplains and were generally associated with old river channels, meander scars, and bends in the river. This environmental distribution suggests that wetlands and riverine exploitation were important to Middle Archaic groups. Because no tool assemblages and few biotic remains were recovered from these sites, it is difficult to infer activities and site function, or to place the sites within an overall settlement pattern. These sites were apparently specialized activity camps, similar to the Early Archaic and Late Archaic occupations. Gathering of nuts was also important (Caddell 1981a). Hunting and gathering activities were associated with these localities. Clarification of these sites' function in Middle Archaic subsistence must await further work.

Within the Gainesville Lake area, Middle Archaic assemblages are associated with the Gulf Coastal Plain Archaic tradition, but farther north Middle Archaic associations are with the Upland Plateau Tennessee Valley Archaic tradition. Coastal Plain Middle Archaic manifestations such as Brain's (1971) Still Gin phase and Connaway's (1977) Denton site have cultural inventories similar to the Gainesville Lake area Middle Archaic sites and similarities with other Tombigbee drainage Middle Archaic components are apparent. The use of Tallahatta quartzite indicates cultural ties with the Coastal Plain source of this material. The buried Middle Archaic middens discovered south of Demopolis, Alabama include lithic assemblages almost exclusively of Tallahatta quartzite. Projectile point types are also generally the same as the Vaughn and Demopolis types identified by Ensor (informal survey 1981) at a Tallahatta quartzite quarry in Clarke County, Alabama and in the buried Archaic middens south of Demopolis. A system of exchange or other mechanisms for acquiring needed commodities such as lithic materials may be inferred from the distribution of the lithic forms manufactured from Tallahatta quartzite.

This Coastal Plain Archaic tradition extends northwestward along the Tombigbee drainage to a point between Columbus and Aberdeen, Mississippi. North of this location, cultural ties are with the Tennessee Valley Archaic. Morrow Mountain and Benton occupations are common north of Columbus-Aberdeen (Rafferty et al. 1980, Hoffman and Otinger 1981, Peterson n.d., Ensor and Studer n.d.). Evidence for Benton occupation within the Gainesville Lake area is practically nonexistent.

The Gainesville Lake area Middle Archaic population density appears to be substantially less than population densities in areas to the north, especially in the vicinity of numerous upper Tombigbee Valley midden mounds (Blakeman 1976, Atkinson 1974, Bense 1981).

Future research should concentrate on identification of other Middle Archaic sites in the Gainesville Lake and contiguous areas using the diagnostic markers established in this study. Excavation of stratified sites yielding well dated assemblages should be given precedence to enhance understanding of Middle Archaic settlement and subsistence.

Late Archaic Period
3,000 B.C. - 1,000 B.C.

Identification of Late Archaic components within the Gainesville Lake area presents the same difficulties as identification of Middle Archaic components. Although certain projectile point knife forms such as Pickwick, Ledbetter, and Little Bear Creek were immediately recognized as dating to the Late Archaic period, the placement of other forms was more confusing. The ubiquitous Gary projectile point type, its distinguishing attributes, and its relationship to a large sample of similar forms defined by Ensor (1981a) as Tombigbee Stemmed was a prime source of this confusion. Ensor (1981a:96) discusses the historical problem of the use of the term Gary in the literature. Separating Late Archaic from Middle Woodland forms was difficult because of the similar form and raw material used in their manufacture. Tombigbee Stemmed forms were separated from Gary projectile points as defined by Newell and Krieger (1949) and by Ford, Phillips, and Haag (1955).

Once this initial typological problem was solved, numerous Late Archaic components were apparent. In fact, many more Late Archaic stemmed forms were recovered than Early and Middle Archaic forms (Ensor 1980). Late Archaic projectile points recovered from the Gainesville Lake area included Little Bear Creek, Mulberry Creek, McIntire, Gary, Elora, Wade, and Cotaco Creek, all of which probably have a temporal span from 3,000 to 1,000 B.C. and slightly later. The overwhelming majority were Gary and Little Bear Creek projectile points. Almost all of these projectile points were made from local heated Tuscaloosa gravels.

Jenkins and Curren (1976) observed that Late Archaic sites in the Gainesville Lake area were transitory camps. No base camps were recognized. Excavations at Sites 1Gr1X1, 1Gr2, 1Gr50, and 1Pi61 indicate that intensive Late Archaic occupations were not represented by semipermanent base camps. Rather, the tool assemblages were diffuse and undiversified suggesting performance of limited activities at these sites. This limited

activity pattern is similar to the preceding Middle Archaic occupations. The ubiquity of Late Archaic projectile points perhaps indicates either more frequent use or that slightly larger groups inhabited the sites.

Technology and Subsistence

No definite Late Archaic assemblages were distinguished at the stratified Sites 1Gr1X1, 1Gr2, and 1Gr50. The lithic technology apparently continued from preceding Early and Middle Archaic times to emphasize the bipolar reduction of unheated Tusaloosa gravel (Ensor 1980:85). The tool inventory found in the intermediate levels at Sites 1Gr2 and 1Gr1X1 was similar to the preceding Middle Archaic components. The tool kit is undiversified. Evidence for biface manufacture is present. The emphasis was apparently on rejuvenation activities, such as resharpening and remodeling tools. The use of nonlocal Tallahatta quartzite continued. Most projectile points, however, were made from local heated Tuscaloosa gravel.

The presence of ground stone tools within Late Archaic components at Sites 1Gr2 and 1Gr50 indicates that gathering was a likely occupation at these sites. Hickory nut shell, acorns, walnuts, and wood charcoal were recovered from Late Archaic proveniences at these two sites (Caddell 1981a). Caddell (1981a) suggests that this restricted plant inventory is probably the result of restricted sample size and recovery techniques but she also states that it could result from limited activity loci. No faunal remains were recovered from definite Archaic contexts and no Archaic shell middens were found.

Site Types, Site Distribution, and Social Inferences

The available data for the Late Archaic period in the Gainesville Lake area, indicates that the site occupations were small, infrequent, and the number of tasks was limited. Late Archaic groups were probably performing activities such as hunting and gathering on a seasonal basis. The lack of storage facilities, burials, and definable activity loci, suggests limited activities. At Site 1Gr50, however, a number of fired clay hearths and associated pits were recovered. These shallow basin shaped pits did not seem suitable for storage. There was, however, an indication of activity areas which would suggest, based on the limited tool kit and botanical assemblages, that these were brief seasonal occupations.

The geographic distribution of the sites suggests that site selection favored access to riverine environments as during Early and Middle Archaic times. Most sites were located on the first alluvial terrace, usually in association with an old river channel or stream juncture.

The presence of nonlocal Tallahatta quartzite suggests continued exchange or seasonal movements for the procurement of this material farther south on the Coastal Plain. Other social ramifications were not apparent from the available Late Archaic data.

Like the antecedent Middle Archaic cultures, the Late Archaic peoples appear to be closely allied with the Coastal Plain Archaic tradition. The

use of local Tuscaloosa gravels in projectile point manufacture, however, perhaps indicates changing settlement and subsistence strategies or social ties. In the succeeding Gulf Formational stage, Flint Creek projectile points were manufactured from nonlocal Camden chert. This use of nonlocal material suggests increasing associations with the upper Tombigbee drainage but continued use of Coastal Plain lithic sources indicates relationships to regions south of the Gainesville Lake area.

Because of the widespread occupation of the Gainesville Lake area during the Late Archaic, the name West Greene has been applied to the archaeological group that manufactured Little Bear Creek cluster projectile points in the Gainesville Lake area from approximately 3,000 to 1,000 B.C. (Ensor 1981:106). West Greene was defined as a provisional phase because so little of its content or form is known.

REGIONAL INTEGRATION

The Gainesville Lake excavations have provided new data on Paleo-Indian and Archaic occupations which may now be integrated with the diverse and largely unknown Paleo-Indian and Archaic societies of the Gulf Coastal Plain. The data on the Archaic from the Gainesville Lake area, although limited, has proved to be illuminating, particularly with regard to its relationship to the Tennessee Valley uplands and the Gulf Coastal Plain. The Gainesville Lake area is situated on the north-central Gulf Coastal Plain in somewhat of an intermediary position between the centers of the two physiographic provinces. It is apparent that a network of social, economic, and even ideological ties between these areas was maintained throughout the Archaic stage.

Archaic and Paleo-Indian inhabitants of the Gainesville Lake area appear to have maintained their primary ties with Coastal Plain cultures to the south along the lower Tombigbee River, the Alabama River, the lower Warrior River, and the Pearl River of southern Alabama and southeastern Mississippi. Relationships with the Tennessee Valley Upland Plateau cultures during these stages were apparently minimal, but some trade or barter contacts were maintained.

The framework for discussion and summarization of current knowledge of Gainesville Lake area Paleo-Indian and Archaic cultures is based primarily upon a pattern of regional diversity which has been observed by this author and others (Sears 1964, Tuck 1974).

This pattern, described below, is based primarily upon environmental differences, technological adaptation, and to a lesser extent, stylistic trends. Geographical and geological parameters have produced a variety of effects on material culture within the Tombigbee drainage area. These patterns may perhaps be more appropriately referred to as the Gulf Coastal Plain tradition and the Upland Plateau tradition. The Gainesville Lake area falls within the northern limits of the Gulf Coastal Plain tradition (Fig. 8). This tradition, as defined here, encompasses the entire Tombigbee drainage south of a line perpendicular to the Tombigbee River and falling between Columbus and Amory, Mississippi. This is the approximate boundary between the steeply entrenched Divide Hills-Tennessee River Hills

Approximate Distribution of the Gulf Coastal Plain and Upland Plateau Archaic Traditions in the Tombigbee Drainage and Contiguous Areas

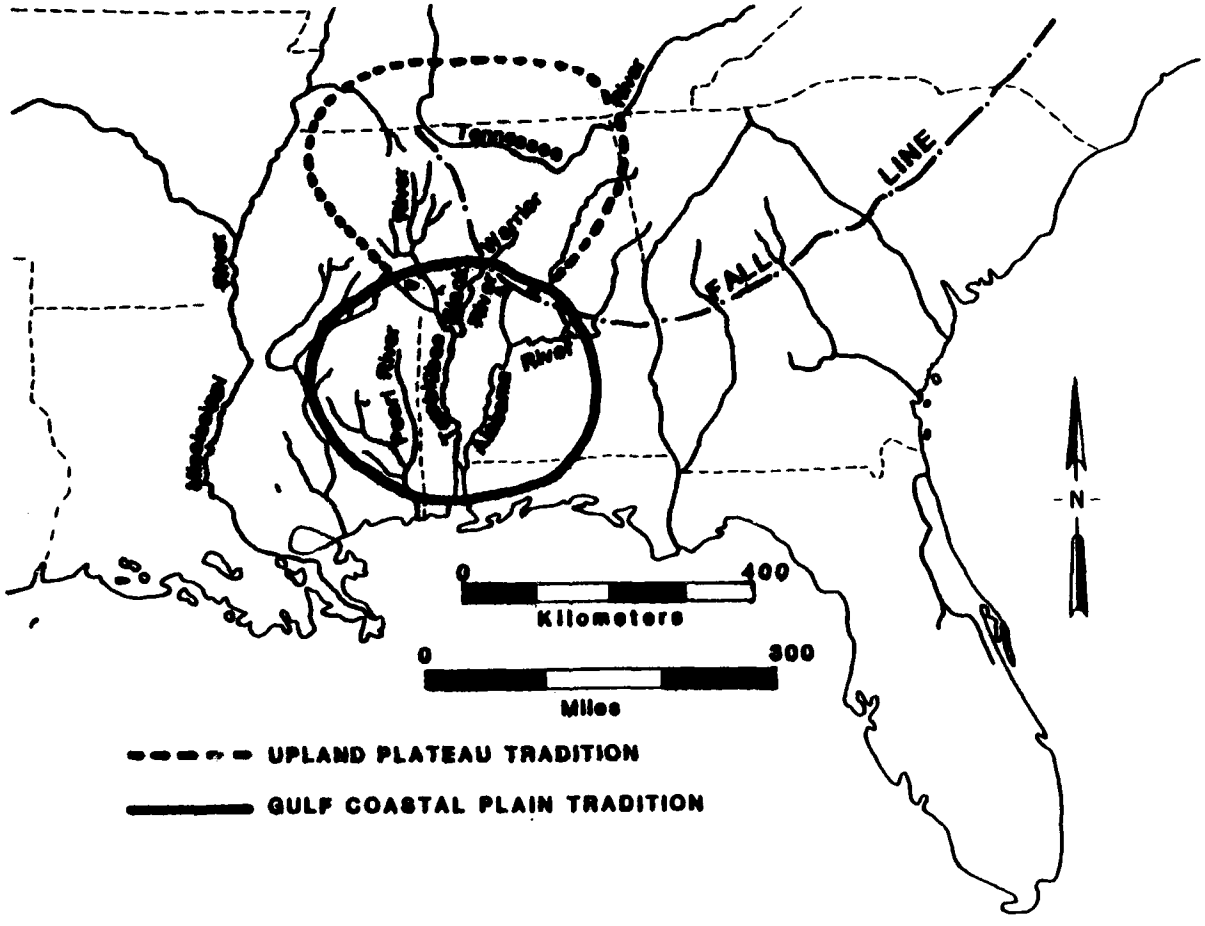


Figure 8.

ecosystem in the north and the extensively developed terrace systems of the Eutaw Hills, Tombigbee Sand Hills, and Prairie ecosystems to the south (Miller et al. 1973). Archaic groups inhabiting the Alabama, lower Warrior, Pearl, and perhaps northern Yazoo drainages in Alabama and Mississippi may have been a part of this tradition (Fig. 8).

The Upland Plateau tradition refers to Archaic cultures in the Tennessee Valley in western Tennessee and northern Alabama as well as the eastern extensions of the Missisippi River Valley in northern Mississippi and southwestern Tennessee (Fig. 8). These traditions distinguish two Archaic patterns of cultural adaptation: (1) that of the relatively flat, chert-free Gulf Coastal Plain, and (2) the hilly Tennessee Valley with its numerous chert outcrops. The adaptive technologies of these two traditions may be distinguished by a relatively few number of technological practices. The Upland Plateau tradition is distinguished by its reliance upon Fort Payne, Bangor, and related outcrop or bedrock cherts and a distinctive biface reduction system involving large Tuscaloosa formation chert cobbles, mainly of the Camden variety (Ensor 1981a, Futato 1980, DeJarnette et al. 1975). The Gulf Coastal Plain tradition is distinguished by technological practices involving the procurement and use of Tallahatta quartzite, Coastal Plain agate, and metaquartzite cobbles, as well as use of bipolar flaking to reduce small, local Tuscaloosa gravels.

The various siliceous stone sources available on the Gulf Coastal Plain and the Upland Plateau appear to be partially responsible for the dichotomy noted by Sears (1964:260) for Southeastern Archaic projectile point types:

> Heavy, broad points dominate assemblages from the Coastal Plain, as far to the northeast as New Jersey. In the mountain areas, particularly the Tennessee River drainage, a slender type with an expanded stem is most frequent. Since culture history follows rather different courses in the two areas from this time on, the distinction appears to have some significance (Sears 1964:260).

Tuck (1974:79) has noted a need for separation between the major Archaic traditions along similar lines.

Although these two broad patterns have been recognized for some time, the parameters set here for their division are meant to serve only as heuristic devices. The emphasis on gross geographical approximations is stressed, particularly for the Gulf Coastal Plain tradition. The hypothetical boundary between these two traditions was inferred from this author's observations and analysis of materials along the Tombigbee River from the Gulf Coast to the Yellow Creek drainage. The boundary appears to correspond roughly to the Fall Line Hills province of the Gulf Coastal Plain physiographic division of Alabama and Mississippi.

These traditions will be discussed placing the Gainesville Lake area early cultures within this overall scheme with particular emphasis on stoneworking technology and environmental characteristics. The discussion will begin by evaluating the evidence for a preprojectile point horizon within the Gainesville Lake area. Subsequent discussion and integration

encompasses Paleo-Indian and Archaic cultures beginning with the Early Archaic Dalton horizon.

Preprojectile Point Horizon

Krieger (1964) has stated a case for the existence of a preprojectile point horizon in the New World. To date, the evidence is still inconclusive to many researchers but others (MacNeish 1971, Adovasio 1978) hold different views. Particular interest has been given this issue recently in the Southeast, especially in the northwestern Alabama area. Lively (1965) and Lively et al. (1965) defined an early lithic tradition that had as its principal attributes a series of unifacially and bifacially percussion flaked pebbles and cobbles of the Tuscaloosa formation. These were characteristically flaked from unheated tan to yellow chert or jasper which occurs profusely in that area. Because these tools were found in surface contexts, were associated with old land forms, and resembled pebble tools of demonstrated antiquity in other parts of the world, Lively and others felt that these crude implements might also date very early.

Since the original definition of the Lively complex and its description (Lively 1965, Lively et al. 1965), a research project was undertaken by the Alabama Archaeological Society to determine the contextual placement of this tool group. DeJarnette, Walthall, and Wimberly (1975) reported on a site excavated with the primary goal of discovering the correct cultural and chronological context of the Lively complex. Walthall (1980:25) states that at least one question seems to have been answered; Lively complex tools were associated with Archaic and Woodland stage occupations within the Buttahatchie drainage. The question of a preprojectile point horizon was unresolved but technological practices suggested a biface reduction system as described by DeJarnette, Walthall, and Wimberly (1975) and Futato (1980) may be partially responsible for the Lively complex artifacts.

Data from the Gainesville Lake area suggests that pebble tools manufactured from local unheated Tuscaloosa gravel were restricted primarily to Archaic and perhaps Paleo-Indian occupations. Jenkins (1975a) noted that pebble tools such as choppers and scrapers were found in stratigraphic context at Site 1Gr2, apparently associated with Early Archaic projectile points, and Ensor (1980:85) found that pebbles reduced by freehand percussion and bipolar techniques were associated with Dalton and later Early Archaic horizons within the lake area. No sites have been found within the Gainesville Lake area that would indicate pebble tools were associated with a preprojectile point horizon. Admittedly, technological adaptations of Archaic groups to Tuscaloosa gravel differ greatly between the central Tombigbee drainage and the Buttahatchie and Little Bear Creek drainages (Ensor 1980:90), however, recent stratigraphic data suggests that Lively, in his original hypothesis, may have been incorrect. This does not rule out the possibility of an early preprojectile point horizon in western Alabama. It does, however, indicate that supporting data for such interpretation is unlikely to be forthcoming in the near future.

The earliest cultural tradition for which there is material evidence in the Gainesville Lake area is the Paleo-Indian. The discussion now

turns to this early manifestation within the Gainesville Lake and related areas.

Paleo-Indian Stage

Answers to substantive questions concerning Paleo-Indian origins and development have been elusive throughout the Gainesville Lake project. The ability to develop research strategies conducive to understanding this stage of prehistory was impeded by the absence of background materials concerning relevant paleoenvironmental parameters, the lack of deep testing and related techniques crucial to detecting buried early man sites, and the restricted archaeological investigations with regard to Gainesville Lake area impact areas.

Despite these limitations, important information concerning this stage of development has been generated. Evidence for Eastern Woodlands Paleo-Indian trends for site and raw material preferences were observed in the Gainesville Lake area. The use of high quality siliceous stone in biface manufacture suggests high mobility of hunter-gatherer groups during the Paleo-Indian stage (Fig. 9) and is comparable to other Paleo-Indian procurement patterns in the Eastern Woodlands (Goodyear 1979, Gardner 1974). Raw materials include Tallahatta quartzite and Coastal Plain agate for the Gainesville Lake specimens. Little else is known of this early hunter-gatherer culture in the lake area, although several lithic implements, manufactured from Coastal Plain agate have been recovered in addition to fluted projectile points. A bifacial adze and a uniface scraper on a blade manufactured from agate were recovered. The apparent associations of raw material type and cultural context in Paleo-Indian tool kits is still uncertain. The data, however, suggests a correlation between the Coastal Plain lithic sources and Paleo-Indian lithic assemblages.

Clovis-Cumberland Horizon

The three fluted projectile point specimens from the central Tombigbee area conform to published descriptions of Clovis and Cumberland fluted bifaces from the Tennessee Valley (Cambron and Hulse 1960, Hubbert n.d., Curren 1977). Paleo-Indian occupations of the Gainesville Lake area fall within the eastern lanceolate projectile point tradition (Fig. 9). The Clovis-Cumberland horizons should date to between 10,000 and 8500 B.C. if comparative dates from other areas apply to the Gainesville data (Fig. 10).

Quad-Beaver Lake Horizon

A later Paleo-Indian manifestation which produced primarily unfluted lanceolate Quad, Beaver Lake, and Wheeler projectile points appears to be present within the lake area. Presently, little is known of its chronological or cultural placement. This late Paleo-Indian manifestiation may post-date the Clovis-Cumberland horizon and pre-date Dalton occupation within the lake area. An arbitrary date from 8500 to 8000 B.C. is suggested for this horizon (Fig. 10).

Paleo-Indian and Archaic Stage Horizons

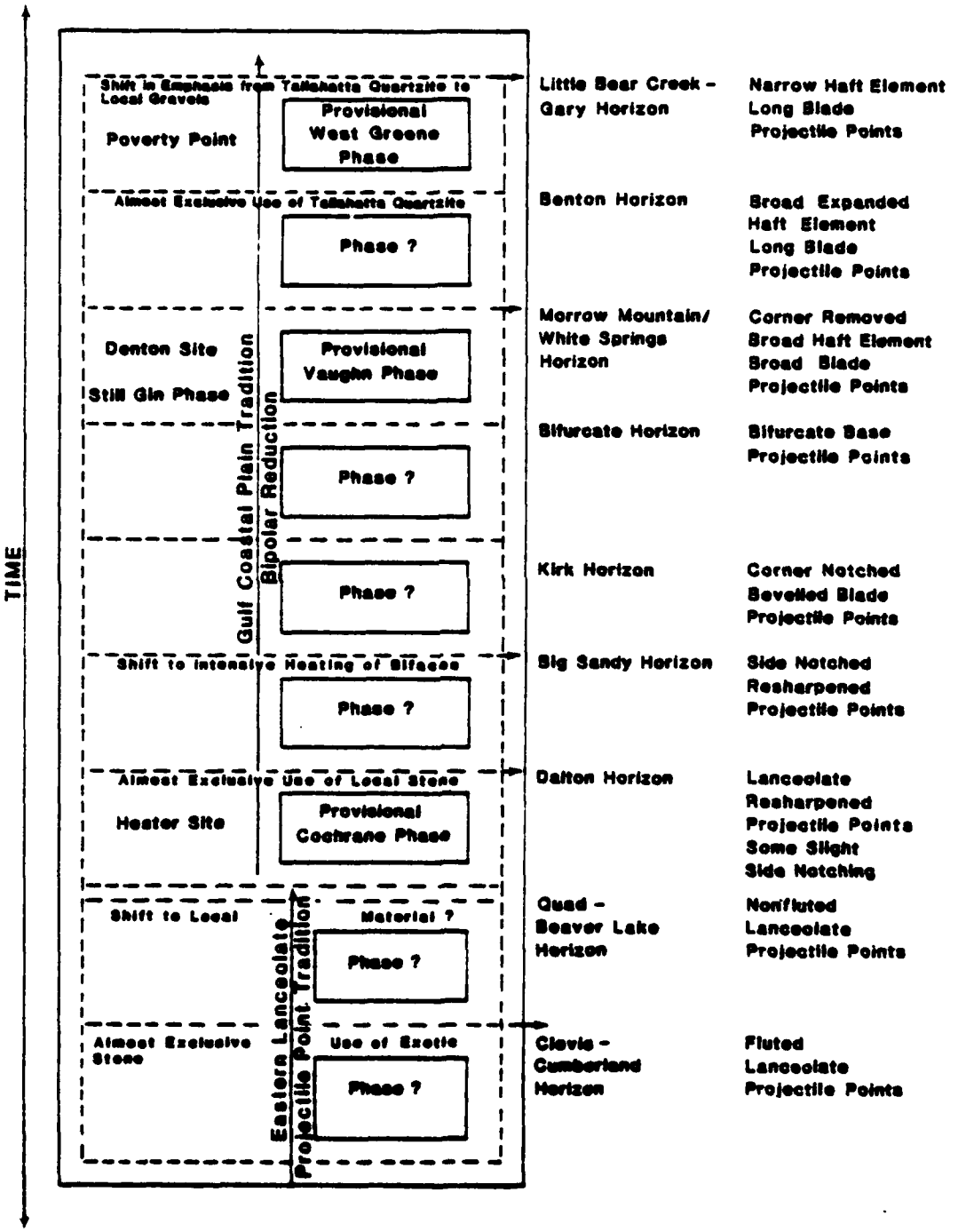


Figure 9.

Paleo-Indian and Archaic Stage Chronology

	STAGE	PERIOD	HORIZON	PHASE
1000 B.C.	Archaic	Late	Little Bear Creek - Gary	Provisional West Greene
3000 B.C.		Middle	Benton ?	Provisional Vaughn
			Morrow Mountain - White Springs	
6000 B.C.		Early	Bifurcate	
6500 B.C.			Kirk	
7500 B.C.			Big Sandy	
			Dalton	Provisional Cochrane
8000 B.C.	Paleo-Indian	Late	Quad - Beaver Lake	
9000 B.C.		Early	Clovis - Cumberland	
10,000 B.C.				

Figure 10.

The widespread similarity in technological attributes across diversified environments suggests congruence in subsistence and settlement patterns during the early Paleo-Indian horizon. There are great similarities in settlement location and technological inventories between the Gainesville Lake area and remainder of the Waterway (Muto and Gunn 1981, Curren 1977). Walthall (1980), Cambron and Waters (1961), and Hubbert (n.d.), however, suggest a major shift in settlement activities in the Tennessee Valley by the late Paleo-Indian Quad-Beaver Lake horizon when the use of upland areas, including rock shelters, is first demonstrated. Whether or not this settlement change conforms to a major environmental change is not known. It could, however, mark the beginning of post-Pleistocene adaptation to the Southeastern deciduous forest.

The apparent uniformity in technological, stylistic, and environmental attributes, at least during the early Paleo-Indian stage, provides a common denominator against which subsequent later Paleo-Indian and Archaic technological and stylistic patterns may be viewed. Although some variation has been recorded for Paleo-Indian adaptation in the Southeast, so few Paleo-Indian assemblages have been isolated and described that such variation has gone primarily undetected. This variation, as pointed out by Gardner (1977) and Goodyear (1979), and the homogenous lithic inventories and raw material sources evidenced for a portion of the Paleo-Indian stage in the Gainesville Lake area, warrant comparisons with Archaic patterns of resource utilization within regional frameworks. Such comparison is presented in the following sections beginning with the Dalton horizon.

Archaic Stage

The following summary of Archaic cultures in the Gainesville Lake area begins with the Dalton horizon and continues with discussions of the remaining Archaic horizons in suspected chronological order. The relationship between the Gainesville Lake Archaic adaptative techniques, subsistence technologies, and environmental parameters to those of contiguous Archaic groups of the Upland Plateau tradition and Gulf Coastal Plain tradition will be stressed. This regional approach should be useful for developing future research orientation along the Tennessee-Tombigbee Waterway to realize more satisfactory explanations for Paleo-Indian and Archaic behavior patterns.

Dalton Horizon

The Dalton horizon was represented quite well within the Gainesville Lake area. Material remains from Dalton sites within the lake area have become one of the best recognized and described artifact assemblages. Sites 1Gr1X1, 1Gr2, 1Pi38, and 1Su1 all contained significant Dalton components. Dalton stone working technology demonstrates recurrent attributes, especially with regard to bipolar flaking. Much of the data on Dalton occupation of Gainesville Lake area comes from the Powell Site (1Pi38), a virtually single Dalton component near Cochrane, Alabama (Ensor 1981b). Dalton artifacts have been recovered in stratified context at Site 1Gr1X1 (Ensor 1980, 1981a) and Site 1Gr2 (Jenkins 1975; Ensor 1980, 1981a) near Gainesville, Alabama.

Recently Brookes (1980) has reported on excavations at the Hester site near Amory, Mississippi which contained a substantial Dalton occupation. These data appear to be comparable with the Gainesville Lake data. Other Dalton sites have been reported along the Waterway between Gainesville to the south and Amory to the north (Bense 1981, Muto and Gunn 1981).

Dalton flaked stone technology is very distinctive within the Gainesville Lake area. It is based upon intensive use of local lithic resources. Techniques of stone tool manufacture range from simple pebble tools to biface reduction. Bipolar flaking of local Tuscaloosa gravels within the lake area is first documented during this horizon (Ensor 1980: 85). Nonlocal resources were probably used to some extent but the earliest Dalton groups used them infrequently.

A form of heat-treatment involving low temperatures was apparently used prior to cobble or pebble reduction (Brookes 1980, Ensor 1981b). Slightly glossy hafted end scrapers, side scrapers, and bifaces which were apparently derived from blades are often found in Dalton contexts. If this glossiness is associated with a type of heat treatment, the usual color change which occurs when most gravels are heated is not present. Occasionally a hafted biface or bifacial preform may exhibit a color change from yellow to red which indicates exposure to heat (Ensor 1980, 1981a). Because models of Dalton biface manufacture and use have not been worked out, the importance and use of heat treatment in the process is not understood.

By far the most visible characteristic of Dalton flaked stone technology within the lake area is the persistent application of bipolar flaking to reduce local gravels. This technique evidently involved both flake-blade blank manufacture and the production of pebble core tools such as splintered wedges or pieces esquillees. This technique allowed Dalton knappers to effectively use local lithic materials, minimizing the amount of exotic stone needed. The distinctive by-products of this technique--bipolar cores and flakes of unheated or slightly heated yellow-tan chert--are found in profusion at Dalton sites within the lake area.

Data from the Powell site, 1Pi38 (Ensor 1981b), indicates that hammerstones, edge battered cobbles, and pitted anvil stones may have been used to facilitate bipolar reduction. Conspicuously absent from Dalton assemblages in the Gainesville Lake area are Dalton adzes as described by Morse and Goodyear (1973). Brookes (1980) also notes a similar lack of adzes within Dalton occupation levels at the Hester site. Within the lake area a series of unifacially and bifacially chipped pebble tools possess bits which could have served in woodworking activities (Ensor 1980, 1981a, 1981b). Many of these, referred to previously as multiple direction scraper planes (Ensor 1981a), have been manufactured using a bipolar technique. Evidence for the use of true blades and blade-like flakes in the manufacture of hafted end scrapers and side scrapers is also evident. Most of the non-projectile point tool assemblage is composed of cobble or pebble tools and by-products of bipolar reduction use such as splintered wedges or pieces esquillees (Ensor 1980).

The Dalton horizon within the Gainesville Lake area is one element of a widespread Dalton adaptation to diversified Southeastern environments. Here it is placed within a chronological chart (Fig. 10) as the first horizon of the Archaic stage. The cultural and chronological placement of the Dalton horizon in the Southeast has been recently summarized by Goodyear (1982). These data, according to Goodyear, support a span from 8500-7900 B.C. for the Dalton culture. Futato (1979:13) and Walthall (1980:48) both place the Dalton horizon in northern Alabama within the Early Archaic period beginning about 8000 B.C. Brookes (1980) places the Dalton horizon around 9000-8000 B.C. at the Hester site in the upper-central Tombigbee drainage. Few radiocarbon dates assignable to undisturbed Dalton contexts have been reported. Goodyear (1982:391) uses the available dates and palynological evidence to assign the Dalton horizon in the Southeast to a 600 year span (8500-7900 B.C.) which seems to correspond to the final post-Pleistocene change to modern vegetational regimes.

Given the current radiocarbon assays, sketchy paleoenvironmental data, and lack of knowledge concerning the appearance and lifespan of stylistic attributes in various ecological settings, the Dalton horizon is placed at around 8000±200 B.C. years in the Gainesville Lake area. Although Goodyear makes some valid inferences concerning the radiocarbon dates and paleoenvironment during Dalton times, the data is still incomplete. The correct temporal position of the late Paleo-Indian complexes in some portions of the Southeast such as northern Alabama is not considered by Goodyear in his assessment of chronological trends. The northern Alabama late Paleo-Indian manifestation has been defined traditionally by the presence of Beaver Lake, Quad, and Wheeler projectile points. It is unclear if Goodyear includes these types with a later fluted type such as Cumberland, or denies the existence of significant differences among Paleo-Indian stylistic trends. Whatever the case, Walthall (1980:32) states that certain stratigraphic and stylistic data indicates that these types should post-date the fluted projectile point types and pre-date the Dalton horizon. Until the chronological position of these later Paleo-Indian forms is known, an immediate post-Pleistocene placement of the Dalton horizon following fluted projectile point complexes of the Eastern Woodlands is tenuous at best.

Whatever the exact temporal position of the Dalton horizon, Brookes (1980) and Ensor (1981b) argue that technological and stylistic data allow separation of Dalton projectile points into two varieties within the Tombigbee drainage. Ensor (1981b) noted that at the Powell site two varieties found in almost equal percentages were present and these can be distinguished by formal attributes but not by cultural, chronological, technological, or functional attributes. One variety has a squared slightly expanded to parallel haft element and pentagonal form. No distinctive haft modification in the form of notching is present. The basal edge is incurvate. Distinctive basal ears, however, are missing (Ensor 1980:88, 1981a:86). This variety is intuitively believed to be earlier than the second variety and was labelled var. Cochrane.

The second variety, as yet unspecified, is referred to here as Hardaway-like. It differs from var. Cochrane in the presence of a recurvate basal edge and an occasional slight side-notching which contributes to a distinctively shouldered appearance. This variety appears most closely

related to the heated reddish Daltons from the Hester site (Brookes 1980), as well as to Hardaway projectile points from North Carolina (Coe 1964), Greenbriar Dalton projectile points (DeJarnette et al. 1962), and certain San Patrice-like points from the Pearce site in Louisiana (Webb et al. 1971). The Cochrane variety most closely resembles the Nuckolls and Colbert Daltons (Lewis and Kneberg 1958, DeJarnette et al. 1962) as well as certain other lanceolate forms in the Southeast that lack notching (Morse 1973, Goodyear 1974, Coe 1964, Webb et al. 1971).

Ensor (1980:88, 1981b) divided Dalton projectile points into two varieties. The second or unspecified variety had been previously referred to by Ensor (1981a:101) as Hardaway var. River Bend. Data from the Powell and Hester sites was in the preliminary stages of analysis when the original type designations were made. Additional stylistic and technological data presented here and elsewhere (Brookes 1980) has established a basis for designating two Dalton varieties.

The technological properties of Dalton projectile points at the Hester site seem to suggest that the Cochrane variety projectile points were the earliest. Brookes (1980) noted that the notched varieties from the Hester site were predominately heat treated and that the chert had changed color from yellow to red. The unnotched forms appeared to be only slightly heated, if at all, and no color change was apparent. Later Early Archaic projectile points such as Big Sandy, Greenbriar, and Kirk Corner Notched were almost exclusively heat treated and exhibited color changes. Brookes (1980) interprets this as evidence for technological continuity between the slightly notched Dalton variety and the later Big Sandy and Greenbriar forms. Until additional stratigraphic data becomes available, a chronological and cultural distinction between these two varieties is improbable.

The Dalton horizon differs somewhat from the preceding Clovis and later Paleo-Indian horizons in the Gainesville Lake area. Figure 9 indicates that by the time Dalton projectile points appeared in the Gainesville Lake area local, primarily unheated, stone was the predominant material used for tool manufacture. The use of unheated local stone was apparently widespread throughout the Tombigbee drainage and Brookes (1980) noted that this was true for the Hester site Dalton materials as well as for San Patrice Dalton projectile points in Mississippi and Louisiana (Webb et al. 1971). Shafer (1973) states that San Patrice projectile points in east Texas were manufactured from local materials, departing from the previous Paleo-Indian use of exotic cryptocrystalline materials. These data suggest a change in the use of lithic resources on the Gulf Coastal Plain and somewhat contradict Goodyear's (1982:391) statement that Dalton groups were regionally highly mobile which was inferred from the areal distribution of exotic stone.

Data from the Gulf Coastal Plain suggests that a distinct change to more a restrictive environmental exploitation may have taken place during the Dalton horizon. Futato (1979:14) observed that Paleo-Indian materials from the middle Tennessee Valley in central northern Alabama are usually made from Fort Payne chert but later (Archaic and Woodland) assemblages are usually made from Bangor chert. Cambron and Hulse (1961:91) observed that projectile points such as side notched and corner notched types as

well as the Dalton and Quad types were also manufactured from Fort Payne chert.

The observed changes in material preference may indicate increasing populations and added regional diversity and distinction among Early Archaic groups. Suceeding horizons such as Big Sandy and Kirk show even more regional diversity and apparently further increases in population (Walthall 1980, Brock 1969, Tuck 1974).

Hubbert (n.d.) noted the presence of late Paleo-Indian projectile point fragments in rock shelters such as those discovered by Clayton (1965) and Cambron and Waters (1961) in northern Alabama indicates a major shift in settlement strategies. As Goodyear (1982) has observed, by Dalton times it is probable that major environmental changes in the post-Pleistocene oak-hickory forests had occurred. Muto and Gunn (1981) suggest modern floral species were present in the central Tombigbee drainage by 10,000 years ago and this corresponds to palynological data from other parts of the Southeast (Watts 1971, Delcourt and Delcourt 1979). Muto and Gunn (1981) observed that cultural responses to environmental changes would lag somewhat behind environmental changes (Muto and Gunn 1981:xxvi).

The Dalton horizon settlement system within the Gainesville Lake area is not understood at this time because the full range of Dalton settlement and associated artifact inventories have not been recovered. Sites such as 1Gr1X1, 1Gr2, and 1Pi38 provided limited data for settlement system interpretation. Artifact assemblages recovered from these sites indicate limited activity camps. Sampling bias, however, could be inherent in the limited excavations. Data from the Powell site (1Pi38), though primarily from a surface context, indicate that a range of lithic techniques were employed at the site. This site could represent a Dalton base camp within easy access to the floodplain forest zone.

The distribution of Dalton sites across the landscape seems to indicate that riverine environments were favored. None of the upland areas were formally surveyed including tributaries of the Tombigbee, however. This makes analysis and interpretation of the Dalton settlement system difficult and precludes comparison with Paleo-Indian and later early Archaic settlement systems, but the distribution of known Dalton settlements seems to foreshadow that of later Big Sandy settlements in the Gainesville Lake area.

The Dalton horizon in the central Tombigbee drainage has been sufficiently documented to allow a preliminary separation of earlier from later complexes. Figures 9 and 10 indicate a provisional phase designation based upon recurrent technological and stylistic attributes. The name Cochrane has been given to this preliminary phase designation. The term provisional phase is used essentially as described by Knight (1981a) to:

> . . . serve as working hypothesis toward the eventual recognition of fuller phases. The provisional phase may be defined as an archaeological unit tentatively hypothesized as being of relatively short duration and limited to a magnitude aligned with tentative notions concerning relatively discrete social

systems, having criteria which distinguish it sufficiently from other units, yet without adequate distributional or descriptive information to satisfy the minimal of requirements of full phase status (Knight 1981a:4-6).

The provisional Cochrane phase is believed to encompass the Tombigbee drainage between Gainesville to the south and Amory to the north. The spatial limitations are not well understood. The associated material remains, however, are on somewhat firmer ground (Brookes 1980; Ensor 1981a, 1981b). Dalton raw materials and technological practices north of Amory, Mississippi appear to differ from those farther south. Although no strict demarcation can currently be made, the adaptation of Gainesville Lake area Dalton groups to local lithic materials using a bipolar technique foreshadows a major technological dichotomy. Thus, the provisional Cochrane phase may be used to expand and test hypotheses concerning major Archaic adaptations along the Tombigbee drainage. Data supporting this Coastal Plain-Upland Plateau dichotomy continues for the Big Sandy, Kirk, and Bifurcate horizons. By the Middle Archaic, however, this division becomes even more pronounced as detailed below.

Big Sandy Horizon

The few remains of Big Sandy occupation recovered from the Gainesville Lake area may reflect the intensity of occupation at the sites investigated or, more likely, they represent sampling bias. Because little of the technological repertoire is known, no provisional phase status is designated (Figs. 9 and 10). There is, however, an apparent change in heat technology for bifacial materials during the Big Sandy horizon. The distinctive side notching provides clear horizon style and technological similarities with other Southeastern regions and suggests the Big Sandy horizon, as discussed by Tuck (1974), extends into the Gainesville Lake area.

Most aspects of Big Sandy stone working technology appear to be closely related to Dalton technology. Bipolar reduction of local unheated or slightly heated gravels continues. Other aspects of Dalton tool assemblages are apparently replicated with unifacial and bifacial pebble scraper planes, scrapers, gouges, wedges, splintered wedges or pieces esquillees, and uniface flake end scrapers present. The bifacial reduction process used in the manufacture of Big Sandy projectile points is not understood, but it may mark the beginning of a process used throughout the remainder of the Archaic and into the Woodland stage in the Gainesville Lake area. This technique seems to involve the intensive use of heat at some stage in the biface reduction process which differs from Dalton heat technology. The Dalton process, when apparent, produces little or no color change (see Brookes 1980 for a similar observation).

The best comparative data for the Big Sandy horizon in the Tombigbee drainage comes from the Hester site where Brookes (1980) claims to have found Big Sandy projectile points stratigraphically above Dalton projectile points. Although evidence for chronological separation of the Dalton horizon is strong (Goodyear 1974), some Big Sandy projectile points approach certain Kirk horizon varieties, expecially technologically. This

similarity has led some authors (Ahler 1981) to suggest that Big Sandy projectile points are functionally distinct artifacts with a different hafting technique within a Kirk horizon tool kit. In addition to the stratigraphic evidence suggested by Brookes (1980), the change in heat technology argues for cultural and chronological separation. Most researchers in the Southeast would agree with this interpretation (Futato 1979; Walthall 1980; Tuck 1974; Goodyear 1974, 1982; Brookes 1980). Brookes (1980:129) further argues that a widespread horizon style marked by side notching may be evident in such forms as Greenbriar, Hardaway, Kessel Side Notched, Cache River, and San Patrice-like projectile points throughout the Eastern Woodlands. The evidence thus supports a time span from around 8000-7500 B.C. for the Big Sandy horizon (Fig. 10).

Settlement pattern data for the Big Sandy horizon in the Gainesville Lake area are practically nonexistent. In the northern Alabama Tennessee Valley Big Sandy settlements are similar to those of Dalton. More quantitative and qualitative differences in tool forms are apparent, however, which has led some researchers (Futato 1979, Tuck 1974, Brock 1969, Walthall 1980) to suggest population increase and increased regional diversity. Data from the Gainesville Lake area is inconclusive on this matter, but recent test excavations at the Powell site (Ensor 1981b) indicate that a buried Big Sandy occupation may be present. This site could expand our knowledge of Big Sandy components. Big Sandy components at Sites 1Gr1X1, 1Gr2, and 1Pi38 (the Powell site) are all located to allow effective exploitation of riverine environments. Brookes (1980) suggests that the function of the Hester site changed from Dalton to Big Sandy times; from a short term transient Dalton camp to a semipermanent Big Sandy camp.

Walthall (1980) suggests that base camps or multiple activity camps and satellite limited activity camps characterized Big Sandy settlements within the northern Alabama Tennessee Valley. Hubbert (n.d.) states that within the Tennessee Valley Big Sandy sites were located in bluff shelters and along river terraces of tributaries, which were also favored for later Archaic occupations. Futato (1979:15) suggested that Big Sandy settlement patterns may represent a major change in adaptation following the establishment of modern flora. Few researchers would question that Kirk horizon peoples were adapted to a modern floral regime over most of the Southeast. The similarity in biface technology between Kirk and Big Sandy projectile points, as documented in the Tombigbee drainage, argues for a major post-Dalton technological change that correlates to some degree with the post-Dalton settlement changes noted above. A major change in environmental adaptation may have began ca. 8000 B.C. and continued into the Kirk and Bifurcate horizons ca. 6000 B.C. (Fig. 10).

Kirk Horizon

The Kirk horizon was represented in the Gainesville Lake area by a group of corner notched and stemmed points found primarily in a stratified context at Sites 1Gr1X1 and 1Gr2. Kirk horizon stone working technology appears to be a direct continuum from the preceding Big Sandy horizon. Although a major stylistic and technological change from side to corner notching took place, biface manufacture with most Kirk Corner Notched points being heated continued. Resharpening and beveling becomes more

pronounced during the Kirk horizon. Figure 9 indicates the major changes and continuities in technology between the two horizons.

Exotic stone such as Tallahatta quartzite was uncommon during late Paleo-Indian and Dalton times. During the Kirk horizon exotic stone was primarily restricted to the manufacture of bifaces and certain specialized tools such as hafted end scrapers. The technological inventory described by Ensor (1980, 1981a, 1981b) for the Early Archaic horizons in the Gainesville Lake area indicates continuity in most aspects of local lithic manufacture. This is represented in Figure 9 by the tradition of bipolar flaking.

Ensor (1981a:100-101) described only one variety for the Kirk cluster or horizon within the lake area, an oversimplification of morphological variability. No further type or variety analysis was proposed because of the extreme range of variation and small sample size of the Kirk collection. Finer chronological distinctions are possible within the Kirk pool and a number of different projectile point types have been established to deal with this (Cambron and Hulse 1975, Coe 1964). Some projectile point types such as Palmer, Charleston Corner Notched, Decatur, Lost Lake, Pine Tree, Kirk Corner Notched, and Kirk Stemmed are morphologically distinct and some are even chronologically distinct (Chapman 1975, 1976; Broyles 1971; Coe 1964). No doubt some Kirk forms within the Gainesville Lake area have temporal significance. Even at sites such as St. Albans, Icehouse Bottom, and Rose Island where large samples of corner notched projectile points were recovered from well stratified contexts, differences in overall morphology and even technological attributes proved to be culturally and chronological diagnostic in only a few cases. Trends noted by Chapman (1976:2,5) and Broyles (1971) were for the smaller corner notched varieties to occur stratigraphically lower than the larger ones, but the deeply corner notched Pine Tree-like and Charleston Corner Notched forms are apparently oldest of all in these research areas. Thus the original designation of the Gainesville Lake area Kirk cluster forms under the heading of var. Unspecified was to reflect the extremely hazy situation in terms of Kirk cultural and chronological variation.

Eventually Kirk horizon assemblages from the Gainesville Lake area and the Gulf Costal Plain in general, such as those described by Chase (1966), DePratter (1975), and Huscher (1964), may yield temporal divisions. Hints of chronological separation through stylistic attributes are present. Until firm stratigraphic data from the Gulf Coastal Plain is available, however, finer chronological distinction is not possible.

The small number of Kirk Stemmed projectile points recovered from the Gainesville Lake area are probably later than the corner notched forms if extrapolation from other areas (Coe 1964) is of any value. Within the lake area the Kirk horizon probably dates between 7500-6500 B.C. based on horizon style markers which have been radiocarbon dated (Fig. 10, Chapman 1976, Broyles 1971).

The type-variety-cluster system used by Ensor (1981a) is based upon the construction of classes of form. These classes were created to facilitate comparisons between Gainesville Lake area materials and those from other areas. Meaningful types and varieties which reflect regional Ar-

chaic adaptations and not merely slight differences in technological or functional variability or even current political boundaries may be defined in the future.

Data on Kirk horizon site distribution and size is extremely limited in the Gainesville Lake area. A preference for riverine habitats is noted for the excavated components. Walthall (1980) and Brock (1969) note that an apparent increase in stylistic diversity and sheer projectile point numbers occurs with the onset of the Kirk horizon in the northern Alabama Tennessee Valley. This could indicate an increased population. It is difficult to evaluate this trend in the Gainesville Lake area because the sample size was limited.

The Kirk component at the Hester site apparently contained a full trajectory lithic assemblage as described by Rabb, Carde, and Stahle (1979). Brookes (1980) feels that the site may represent a Kirk base camp. Kirk components at Sites 1Gr1X1 and 1Gr2 in the Gainesville Lake area appear to represent limited activity or short trajectory assemblages, perhaps suggesting a specialized extractive seasonal camp. Documentation of the Kirk settlement system must await intensive deep testing and excavation along tributaries of the Tombigbee River.

Bifurcate Horizon

Only two projectile points attributable to the Bifurcate horizon were recovered. These were found in a stratified context at Site 1Gr2. Bifurcate horizon technology appears to be a continuation of the preceding Kirk horizon (Ensor 1980, 1981a). Bipolar reduction of local unheated gravels produced core tools as well as flake tools. An apparent similarity in biface production is suggested by the presence of a heated bifurcate projectile point. Only two bifurcates were recovered, however.

The two bifurcate projectile points from the Gainesville Lake area closely resemble the Kanawha Stemmed type as defined by Broyles (1971) and a bifurcate variety defined by Chapman (1975). Chapman (1975:213-214) and Broyles (1971) have dated bifurcate base projectile points in their respective areas to around 6700-6200 B.C. Figure 10 indicates this time span for the Bifurcate horizon and Figure 9 indicates the technological continuity and innovation during this portion of the Early Archaic period. Virtually no data was obtained concerning settlement patterns for this time period. Chapman (1975) has suggested a system of base camps and satellite camps in the Little Tennessee River Valley of Tennessee.

Morrow Mountain-White Springs Horizon

The Morrow Mountain-White Springs horizon takes its name primarily from Coe's (1964) recognition that a series of rounded base, corner removed projectile points belonged to time interval bracketed by Early Archaic Kirk forms and Late Archaic Savannah River forms. This type became known as Morrow Mountain and subsequently has been recognized over a wide portion of the Southeast (Cridlebaugh 1977:6-19). It has traditionally been one of the few recognizable, or perhaps recognized, Middle

Archaic horizon markers in the Southeast (Walthall 1980). The term Morrow Mountain-White Springs horizon, as used here, encompasses all Middle Archaic cultures which may potentially be recognized in the Gainesville Lake area, with the recognition that future subdivision is likely.

Because little or no work had been done concerning the Middle Archaic in this portion of the Southeast prior to the present study, the delineation of a Middle Archaic manifestation for the Gainesville Lake area was an important research issue. Ensor (1981a) noted two and possibly three clusters of projectile point/knives which were potentially assignable to this period: (1) the Eva cluster, (2) the Morrow Mountain-White Springs cluster, and (3) the Benton cluster. Only a single Eva projectile point, three Morrow Mountain-like projectile points, and four Benton projectile points were recovered from the survey and excavations in the Gainesville Lake area. The majority of the potential Middle Archaic projectile points recovered were classified as Vaughn and Demopolis types (Ensor 1981a:99). The Vaughn projectile point type was first described by Atkinson (1974) from a specimen found in apparent association with Middle Archaic burials. The Gainesville Lake area surveys and excavations recovered quite a few Vaughn projectile points. A related type, Demopolis, was defined by Ensor (1981a:99). Together, these two point types potentially represent new horizon markers for the Middle Archaic in this portion of the Gulf Coastal Plain. Substantive stratigraphic evidence is lacking although radiocarbon determinations on bone samples from the Vaughn Mound have yielded dates which place this type within the Middle Archaic period. Additional data which supports this cultural and chronological assignment comes from Site 1Su26 south of Demopolis, Alabama. Curren (personal communication 1977) has obtained a date of over 7,000 years ago from a buried cultural zone containing one Vaughn and one Demopolis projectile point. The morphological similarities of the Vaughn projectile points to members of the White Springs-Sykes cluster defined by Faulkner and McCollough (1973) for the Normandy Reservoir are apparent. The Vaughn projectile point also closely resembles Denton and Opposum Bayou projectile points defined by Connaway (1977:137) for the northern Yazoo Basin which probably date to the fourth millenium B.C. A suggested date for the Vaughn and Demopolis projectile points in the Gainesville Lake area is between 6000 and 3000 B.C. Atkinson's (1974) data suggests a late Middle Archaic date around 4000 to 3500 B.C. for the Vaughn projectile point (Fig. 10).

A provisional Middle Archaic Vaughn phase serves the same purpose for the Middle Archaic as the provisional Cochrane phase did for the Early Archaic (Fig. 9). The similarity of the Vaughn projectile point type to the Sykes-White Springs forms in the Upland Plateau area indicates that the provisional Vaughn phase could overlap temporally with Late Middle Archaic manifestations in that area.

The provisional Vaughn phase biface reduction technology differed from the preceeding Early Archaic biface technology. Figure 9 indicates that by Vaughn times bifaces are manufactured almost exclusively from Tallahatta quartzite, an exotic stone occurring south of the lake area (Dunning 1964). Current evidence suggests that even though biface reduction practices changed with the inception of the Middle Archaic, continuity of technological adaptation to local materials continued. That is, the persistence of the bipolar reduction technique is evident throughout the Middle Archaic (Fig. 9).

Beginning with the Middle Archaic, there was apparently a major change to the use of Coastal Plain lithic resources. Materials suitable for biface manufacture were specifically selected. Ensor (1981a:17) has described a lithic procurement system involving the acquisition of Tallahatta quartzite, primarily in the form of quarry blanks or bifacial cores. Quarry and habitation sites south of Demopolis, Alabama evidence intensive use of Tallahatta quartzite during Middle to Late Archaic times. The mechanisms by which this stone was moved to the Gainesville Lake area during Vaughn times are not understood. The emphasis upon the use of nonlocal stone at this time appears to correlate chronologically with generalized trends in Middle to Late Archaic trading patterns in the Southeast (Goad 1978, Brose 1978).

Tallahatta quartzite bifacial blanks are relatively common along the Tombigbee River in the Gainesville Lake area and farther south. Middle to Late Archaic levels in Gainesville sites contain high percentages of Tallahatta quartzite retouch flakes. The use intensity of this material during Vaughn times apparently conforms to a monotonic fall-off model where finds of a restricted resource decrease with effective distance from the source, as described by Renfrew (1977:72).

A system of barter and exchange involving family units at base camps and limited activity camps may be responsible for the distritution of this material. An explicit testable model that accounts for the observed distributions of Tallahatta quartzite within the Gainesville Lake and contiguous areas has yet to be developed. This should be a high research priority in future work along the central and lower Tombigbee River.

An exchange system involving the procurement and use of Tallahatta quartizite was apparently widespread during the Middle and Late Archaic periods in south Alabama, west-central Alabama, and southeast Mississippi. The participation of Middle to Late Archaic groups in this system is used here as a defining characteristic of the Gulf Coastal Plain tradition (Fig. 8). Evidence for Tallahatta quartzite use has been found in the upper Tombigbee drainage, the Tennessee Valley (Dunning 1964), Louisiana (Conn 1977), and Arkansas (Jeter, personal communication 1981). However the apparent northern limits of intensive Tallahatta quartzite use during Middle to Late Archaic times within the Tombigbee drainage was around Columbus, Mississippi.

Figure 8 indicates an arbitrary boundary proposed for the initial segregation of the Coastal Plain and Upland Plateau Archaic traditions. North of this line in northeastern Mississippi and northwestern Alabama a distinct biface reduction system was adapted to local Tuscaloosa gravels (Camden chert) as well as to Fort Payne and Bangor cherts. Bipolar flaking as a method of cobble reduction in this area is practially nonexistent (Ensor 1980:90). Apparently a transitional zone which probably includes the area from Columbus, Mississippi northward to Amory, Mississippi exists between the two major technological traditions within the Tombigbee drainage. North and south of this transitional zone lithic inventories are quite distinct indicating that Vaughn peoples were situated near the northern end of the Gulf Coastal Plain tradition area. Interaction between Coastal Plain and Upland Plateau tradition Archaic groups was apparently infrequent. Occasional finds of Fort Payne and Bangor cherts are

made within the Gainesville Lake area and a number of Vaughn projectile points from Middle Archaic sites in the upper Tombigbee drainage were manufactured from Tallahatta quartzite.

Perhaps the most pervasive environmental difference between the Upland Plateau and Gainesville Lake area is the size of raw lithic materials. Ensor (1980:90) has noticed a reduction in size of Tuscaloosa gravel from north to south along the Waterway. Technological adaptations such as the biface reduction model discussed by Futato (1980) and the bipolar reduction technique described by Ensor (1980, 1981a) appear to be directly related to the gravel sizes along the Waterway.

Settlement pattern studies have been hampered by buried components and survey limitations. Jenkins and Curren (1976) suggested that Middle to Late Archaic transitory camps may have been used by peoples in the Gainesville Lake area who also traveled to other locations such as the Vaughn Mound which would have served as a base camps. Such base camps may be present within the lake area; they are almost certainly present in buried context south of Demopolis and are common north of Columbus, Mississippi. Seasonal summer and winter base camps such as those proposed by Bowen (1977) and O'Hear (1978) for the western Tennessee Valley and Yellow Creek drainages to the north may be present. Major cultural and environmental differences, however, are evident so that additional settlement data is needed to test such models in the Gainesville Lake area. The Vaughn components at Sites 1Gr1X1, 1Gr2, 1Pi61, and 1Pi65 suggest a base camp-satellite camp settlement pattern oriented toward the exploitation of riverine resources. Work currently being performed by the University of South Alabama should help define the settlement system for Vaughn and other Middle to Late Archaic phases on the Gulf Coastal Plain. Blakeman (1975, 1976), Raffery et al. (1980), and Johnson (1981) have provided generalized models of Archaic settlement and population trends from Columbus Lake northward. These models, however, deal primarily with the Upland Plateau Archaic tradition. Quantitative models for Archaic site types and distribution placed within a regional framework are needed for the Gainesville Lake area and the lower Tombigbee River Valley. A trend toward increased population during Middle Archaic Vaughn times is suggested by the probable presence of base camps. Additional work is necessary to quantify these trends.

Benton Horizon

Only four projectile points were recovered from the Gainesville Lake area that approached Benton morphology and three of these were manufactured from Tallahatta quartzite or Camden chert not available in the lake area. Benton sites are common north of Aberdeen, Mississippi. Interestingly, the procurement and exchange of exotic stone materials is similar during the Middle to Late Archaic periods in both the Gainesville Lake area and in northeastern Mississippi. Fort Payne chert quarry blanks and bifacial projectile points along with resharpening flakes are found concentrated in these Benton sites. The counterpart to this exchange system in the Gainesville Lake area and farther south involves the use of Tallahatta quartzite (Ensor 1981a). The presence of a Benton horizon in the Gainesville Lake area has not been documented. The provisional Vaughn

phase (Fig. 9) may represent a stylistic and cultural expression of the Gulf Coastal Plain Archaic at least partially coeval with Benton Upland Plateau groups to the north. Similar technological and social patterns in both areas, however, could imply that similar patterns of exchange extend-extended over diverse areas of the Southeast during Middle to Late Archaic times. Firm stratigraphic and chronological controls are needed to confirm or negate this hypothesis.

Little Bear Creek-Gary Horizon

The Late Archaic in the Gainesville Lake area is represented by the profusion of projectile points assignable to the Little Bear Creek cluster. The projectile points that comprise this cluster have narrow haft elements and relatively long blades. They are manufactured primarily from local heated gravels but some are made from Tallahatta quartzite, and rarely, Fort Payne chert, representing a change from preceding Vaughn times when projectile points were manufactured almost exclusively from Tallahatta quartzite (Fig. 9). The continued use of bipolar flaking and unheated local materials is likely. Other Late Archaic projectile point types such as Elora, Cotaco Creek, Pickwick, McIntire, and Motley are minor occurrences.

The exact chronological position of Little Bear Creek and Gary forms is not presently known. Data from the Little Bear Creek Reservoir in northwest Alabama places the Little Bear Creek type between 1500-1000 B.C. (Futato 1975). Wynn and Atkinson (1976) have dated a Late Archaic feature in the upper-central Tombigbee drainage to ca. 2000 B.C. Based on these data the Little Bear Creek-Gary horizon in the Gainesville Lake area is probably partially coeval with the Perry phase of the Tennessee River drainage in northern Alabama (Futato 1975). It probably dates between 3000-1000 B.C. (Fig. 10). Little Bear Creek and Gary projectile points continue to be made in Gulf Formational times so they are not exclusive markers for Late Archaic habitation. Futato (personal communication 1979) has recognized Little Bear Creek varieties from the Cedar Creek drainage. The most recent variety retains a slightly expanded haft element and was designated by Futato as var. Mulberry Creek.

Settlement system studies of Late Archaic society are in the early stages in the Gainesville Lake area. Components excavated to date have produced limited material remains with little assemblage diversity suggesting specialized activity camps of some type. The fired clay areas and associated pits at Site 1Gr50 probably represent remains of such an extractive camp. No base camps have yet been identified yet in the lake area. Site 1Pi65 is perhaps a likely candidate but it has not been systematically investigated.

SUMMARY

Many technological and stylistic changes are evident from the study of Paleo-Indian and Archaic materials in the Gainesville Lake area. These have been documented and placed in regional perspective. The regional approach employed for analysis and interpretation of Paleo-Indian and

Archaic societies was made to define those cultural and environmental parameters that are significant in affecting material remains and the human behavior which produced them, especially with regard to technological adaptation. The concept of the Gulf Coastal Plain and Upland Plateau traditions, with their different adaptive poses and distributions, may prove useful in orienting future Paleo-Indian and Archaic research in the Tombigbee drainage.

CHAPTER IV

GULF FORMATIONAL STAGE

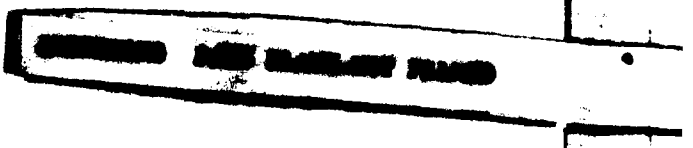
As more data and better chronologies emerge within the Southern Coastal Plain region, the simplified Archaic-Woodland dichotomy no longer accurately reflects internal developments now recognized within local and regional sequences. Fiber tempered and other early ceramic complexes of the Coastal Plain present a classifactory problem in the Archaic-Woodland developmental sequence. Are these cultures that produced ceramics, yet apparently continued a Late Archaic lifeway, to be considered Archaic or Woodland? Willey (1966:257-258) and Jennings (1974) have addressed this problem but others largely ignore it.

Walthall and Jenkins (1976) proposed the Gulf Formational stage, an intermediate stage between the Archaic and Woodland, to deal with this problem within the Coastal Plain region. The Gulf Formational stage began around 2500 B.C. in the eastern Coastal Plain and lasted until approximately 100 B.C. in the western Coastal Plain. The appearance and exclusive use of Gulf tradition ceramics marks the beginning of the Gulf Formational stage at different times in different areas of the Coastal Plain. The end of this stage is signaled at different times in different areas of the Coastal Plain by the appearance and dominance of the Northern, Middle Eastern and Southern Appalachian tradition ceramics (Caldwell 1958) over those of the Gulf tradition. These traditions are referred to collectively in this paper as Woodland. Between 500 B.C. and 100 B.C. these complexes either totally replaced or became intermixed with the local Gulf tradition complexes.

Gulf tradition ceramics are characterized by incised, punctated, pinched, and shell stamped (including rocker and dentate stamped) designs. Podal supports also have their origin in the Gulf tradition (Walthall and Jenkins 1976:48). The frequent occurrence of flat bases and the occasional placement of bosses punched through from the inside of the vessel just below the lip is also characteristic. Griffin (1946:49) has observed that some of these modes appear widely in the northern states, but as a group they characterize ceramic complexes in the Southern Coastal Plain prior to 500 B.C. In Caldwell's terms (1958:54), they were "early Gulf."

The term Gulf tradition used by Walthall and Jenkins (1976) and in this paper is most consistent with Bullen's (1971, 1972, 1974) but differs from Caldwell's (1958) and Sears' (1954) use of the same term. Caldwell and Sears' Middle Woodland Gulf tradition includes Woodland ceramics and burial mounds in addition to the ceramic decorations that Walthall and Jenkins (1976) assign to the Gulf tradition.

At approximately 1200 to 1000 B.C. fiber tempered Wheeler series ceramics appeared in western Alabama and eastern Mississippi. Wheeler and the succeeding Alexander series ceramics of the Henson Springs phase have a southern Coastal Plain origin. Both series are products of the Gulf tradition, a long ceramic development within the southern Coastal



Plain. This ceramic tradition can be traced to Atlantic Coast components of the Stallings Island series (Fairbanks 1942, Stoltman 1972), the Orange series of Florida (Bullen 1972), and possibly to the Bayou La Batre series of the Mobile Bay area (Wimberly 1960). The Gulf Formational stage has been divided into early, middle, and late periods. The Early Gulf Formational period is represented only in the eastern Coastal Plain by the Stallings Island and Orange series. The Middle Gulf Formational period is regionally manifested in the western Coastal Plain central and upper Tombigbee drainage by the Wheeler series and is followed in that area by the Late Gulf Formational Alexander series.

MIDDLE GULF FORMATIONAL PERIOD
(1000 B.C. - 500 B. C.)

Two major cultural manifestations in the western portion of the southern Coastal Plain represent the Middle Gulf Formational period: (1) the Poverty Point culture or variant (Ford and Webb 1956) was confined to the lower Mississippi Valley, (2) the Wheeler variant (Haag 1942, Jenkins 1975b) may have been centered in the western Tennessee Valley, contiguous to the Coastal Plain. Recent research has further documented the presence of Wheeler ceramics throughout much of eastern Mississippi and western Alabama within the Tombigbee drainage.

Broken Pumpkin Creek Phase

The Broken Pumpkin Creek phase, named for a large Wheeler base camp eight miles west of the confluence of James Creek and the Tombigbee River, represents the local manifestation of the Middle Gulf Formational period and the Wheeler variant for the Gainesville Lake area, the entire central Tombigbee drainage, and probably for the upper Tombigbee drainage as well (Fig. 11).

Content

Ceramics

The fiber tempered Wheeler series: Wheeler Plain, Wheeler Dentate Stamped, Wheeler Punctated, and Wheeler Simple Stamped (Sears and Griffin 1950) are diagnostic ceramics of the Broken Pumpkin Creek phase. Local varieties for each of these types have been defined for the Gainesville Lake area. Plain pottery accounts for 85 to 90 percent of all the Wheeler pottery recovered within the Gainesville Lake area. Punctated and dentate stamped pottery is next in frequency and the simple stamped surface treatment is usually less frequent. The dominant Wheeler series vessel shape is the flat based beaker. The simple bowl, however, occurs also. One restorable Wheeler beaker was found at Site 1Gr2 (Jenkins 1972).

Lithics

The best data on Gulf Formational lithic technology in the Gainesville Lake area comes from Site 1Gr2 where the basic Broken Pumpkin Creek

Gulf Formational and Woodland Variants

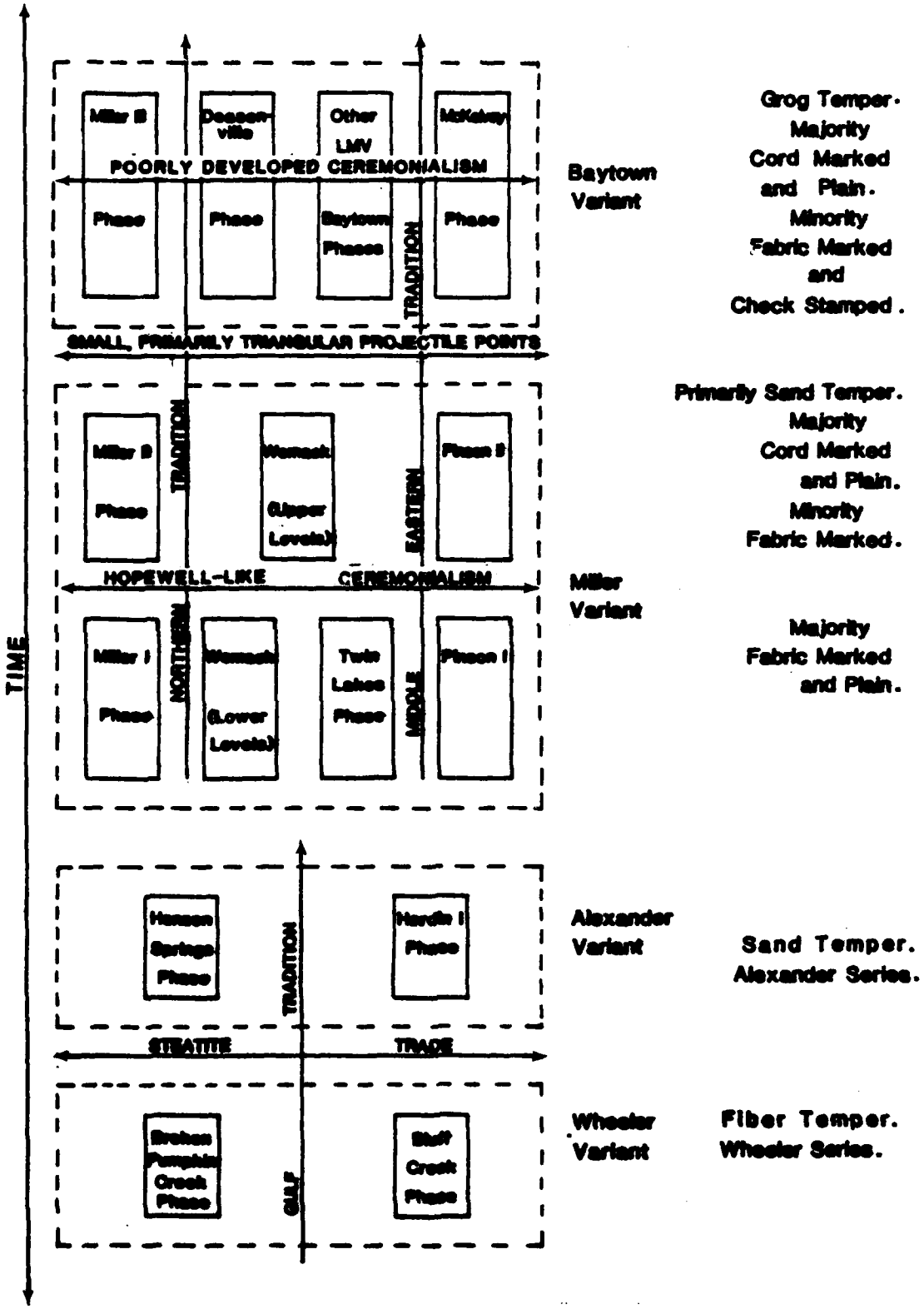


Figure 11.

phase lithic technology appears to be a continuation of Archaic patterns. This continuity is shown by the persistence and predominance of local nonheated stone as the major form of debitage in both stratified Archaic and Gulf Formational excavation levels. The use of exotic stone, Tallahatta quartzite in particular, and the form of finished tools remains constant from the preceding Late Archaic, and perhaps even increases in frequency in Gulf Formational times (Ensor 1980:87).

Within the Gainesville Lake area, the projectile point types associated with the fiber tempered Wheeler ceramics are those of the Wade cluster and possibly Little Bear Creek and Flint Creek clusters. Wade var. Wade, Cotaco Creek var. Cotaco Creek, and the Motley var. Unspecified projectile point forms comprise the Wade cluster. Although the the Wheeler ceramics and Wade cluster lithic associations are not confirmed by consistent stratigraphic data, these projectile point types and varieties do consistently appear within Wheeler components. The Wade projectile point type has been dated consistently between 1200 B.C. and 500 B.C. in Tennessee (Faulkner and Graham 1966, Morse and Polhemus n.d.a:28, Faulkner and McCollough 1974:320). The Gainesville Lake area Motley var. Unspecified closely resembles the lower Mississippi Valley Motley var. Motley (Ford, Phillips, and Haag 1955:129-30), a common Poverty Point form that has been dated to around 1000 B.C. (Weber and Webb 1970). Cotaco Creek var. Cotaco Creek projectile points overlap morphologically with certain Flint Creek cluster forms and may fall toward the later end of the Wade developmental continuum (Ensor 1981a:159-160). Cotaco Creek projectile points have been found in direct association with Wheeler ceramics in the western middle Tennessee Valley (Benthall 1966).

Subsistence

Only a small amount of subsistence data has been recovered for the Broken Pumpkin Creek phase. Small Broken Pumpkin Creek components were present at all of the excavated Gainesville Lake area sites, but there was very little material in closed context. Available dietary data for the Broken Pumpkin Creek phase consists primarily of nut and deer remains (Caddell 1981a, Woodrick 1981).

Settlement Patterns

All of the Broken Pumpkin Creek phase components recorded in the Gainesville Lake area represent small, temporary occupations. All of the components located by the 1975 survey (Jenkins et al. 1975) and later (a total of nine components) were located within the slope forest, above the floodplain forest, but below the prairie. Hickory nuts were the major plant remains associated with these small components, indicating that the exploitation of the fall mast crops by small groups may have been one of the major functions represented. Approximately 14 percent of the slope forest tree species are hickory and 16 percent of the adjacent floodplain forest tree species are hickory. Both the slope and floodplain forest zones include a substantial proportion of hickory trees within a restricted area along the river corridor (Fig. 12). There are no hickory trees in the prairie and only 8 or 9 percent of the upland forest trees are hickory (Caddell 1981a).

Gainesville Lake Area Vegetation Zone Reconstruction

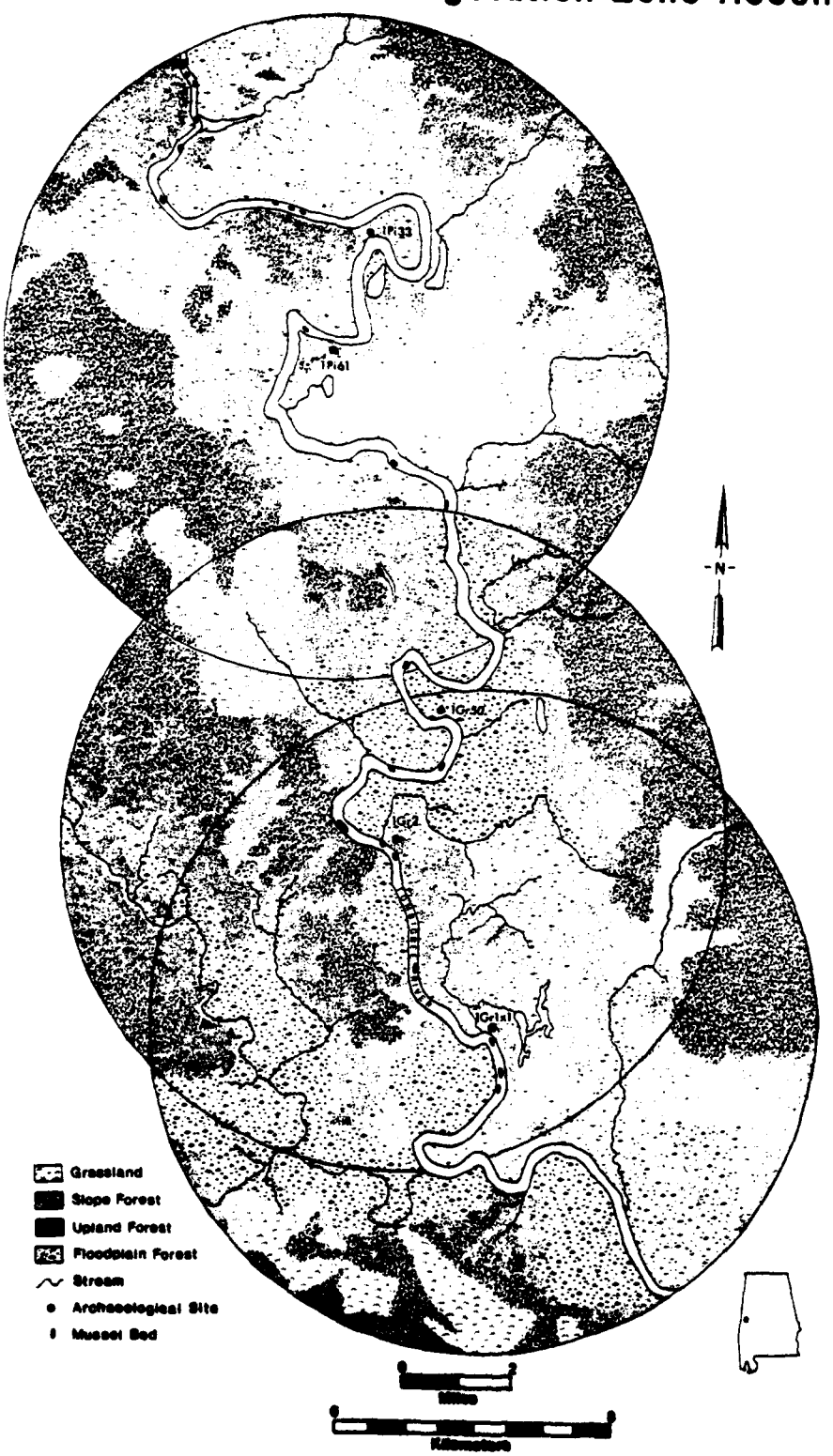


Figure 12.

Deer hunting was probably also conducted from these sites during the fall months. Since oak comprised 61 percent of the slope forest tree species (Caddell 1981a), deer may have congregated within the slope forest during the fall months to feed on the acorns. The prairie, however, may have permitted more intensive deer hunting. The prairie was essentially treeless at European contact, except for sporadic oaks that comprised 100 percent of the tree species (Caddell 1981a:16).

Swenson et al. (1941:79 ff.) observed that the prairie soils vary in their capacity to support forest vegetation. The Sumter (white prairie) and Houston (black prairie) clays are alkaline and support essentially grass lands. The Vaiden, Eutaw and Oktibbeha prairie soils, on the other hand, are acid soils that may support dense forests, principally of oak. The Oktibbeha soils (red prarie) support a forest vegetation principally comprised of post oak. Deer may have congregated within these relatively open oak forests to consume acorns. Clumps of oak trees would have also provided a large amount of edge environment where the deer could feed on herbaceous plants. Consequently, the prehistoric inhabitants may have congregated in the prairie where deer fed on the acorn crops during the fall and browsed on herbaceous plants during the spring. This pattern of exploitation may be one reason for base camps within the prairie such as the Broken Pumpkin Creek site. Several extended families may have gathered at these sites during the spring and fall for co-operative hunts. Indeed, the Broken Pumpkin Creek site had a large amount of deer bone in the midden. Late fall was probably the time of most optimal deer hunting. It is then that deer attain their maximum yearly weight (Severinghaus and Cheatum 1956:83).

The distribution of resources and sites suggests that the Broken Pumpkin Creek people participated in a central-based wandering type of settlement system. Beardsley et al. (1956:138) define this settlement system as, "A community that spends part of each year wandering and the rest at a settlement or 'central base,' to which it may or may not consistently return in subsequent years."

Sites such as the Broken Pumpkin Creek site may have been fall base camps where several extended families met to exploit the deer populations that fed on the acorn masts in the prairie oak clumps. The small river valley transitory camps may have been task specific camps occupied in the fall to exploit the floodplain forest and slope forest hickory mast crops. The river valley camps were located within these forest zones. Hickory nuts perhaps were transported to the prairie base camps. Sites that represent the spring and summer seasons of the annual round have not yet been recognized.

Space, Time, and External Relationships

The geographic range of the Broken Pumpkin Creek phase and other Wheeler variant phases have not yet been clearly defined for three reasons: (1) the Wheeler ceramic series from the Tennessee Valley south to the Pearl River is virtually identical throughout its geographic distribution. Consequently, distinct regional Wheeler phases have not been defined. (2) Survey data, especially east and west of the Tombigbee River

Valley, is lacking. (3) Wheeler populations were small. The small numbers of identified larger base camps are widely spaced. The more plentiful smaller transitory camps contain few diagnostic artifacts. Even where surveys have been completed, the few larger base camps that would provide the best data for phase definition, may be easily missed. For these reasons, the Broken Pumpkin Creek phase geographical range is currently defined as drainage specific. Because later ceramic complexes in the Southeast were often confined to specific drainages, the drainage specific definition of the Broken Pumpkin Creek phase should provide a workable temporary definition. The Broken Pumpkin Creek phase, as defined here, includes the central and upper Tombigbee drainages and that portion of the lower Warrior drainage adjacent to the central Tombigbee area (Fig. 13).

The Broken Pumpkin Creek phase can be best dated by documenting the temporal position of the Wheeler series. Because the stratigraphic contexts for Wheeler pottery in the Gainesville Lake area are generally poor, the temporal position of Wheeler ceramics can be best documented from good stratigraphic contexts and radiometric data outside the Gainesville Lake area.

The Wheeler series has previously been regarded as peculiar to the Tennessee Valley where the series was first defined (Haag 1942, Sears and Griffin 1950). More recent research, however, has recorded Wheeler pottery throughout western Alabama, north of the Mobile Delta, much of the state of Mississippi, and as far west as the Poverty Point site (Webb et al. n.d.). The best stratigraphic evidence supporting the temporal priority of Wheeler pottery is from the Bluff Creek site, Site 1Lu59, in the western Tennessee Valley. Site 1Lu59 was a large stratified shell midden and one of two known large Wheeler components (possibly base camps) in the Tennessee Valley. More than six feet of midden at Site 1Lu59 contained Wheeler ceramics; the lower three feet of this midden was a pure stratum containing only sherds of the Bluff Creek complex (Walthall and Jenkins 1976). Plain and punctated sherds predominated in the lower three feet of the midden. Simple and dentate stamped sherds increased in frequency in the upper three feet (Webb and DeJarnette 1942:126-130).

The Claiborne site, at the mouth of the Pearl River on the Mississippi Gulf Coast, provided further evidence for the chronological placement of Wheeler pottery (Fig. 13). At the Claiborne site, a Wheeler or late Stallings Island complex comprised of Wheeler Plain and Wheeler Punctated was radiocarbon dated at 1240 B.C. and 1150 B.C. (Gagliano and Webb 1970:69). No Wheeler Dentate Stamped was present. Additional dates from northwest Mississippi are the earliest for Wheeler pottery in that area. At the Teoc Creek site, fiber tempered pottery was recovered in the level above a Poverty Point period zone which yielded a thermoluminiscence date of 1070±200 B.C. and an average radiocarbon date of 1364 B.C. (Fig. 13, Connaway et al. 1977:107). The Wheeler pottery from this site was also both plain and punctated. The Teoc Creek dates place an early version of the Wheeler series with both plain and punctated surface treatments no earlier than 1200 B.C. The absence of dentate stamping suggests that these are probably early components. Dentate stamping probably appears in the Wheeler series after the initial introduction of fiber tempered pottery into eastern Mississippi.

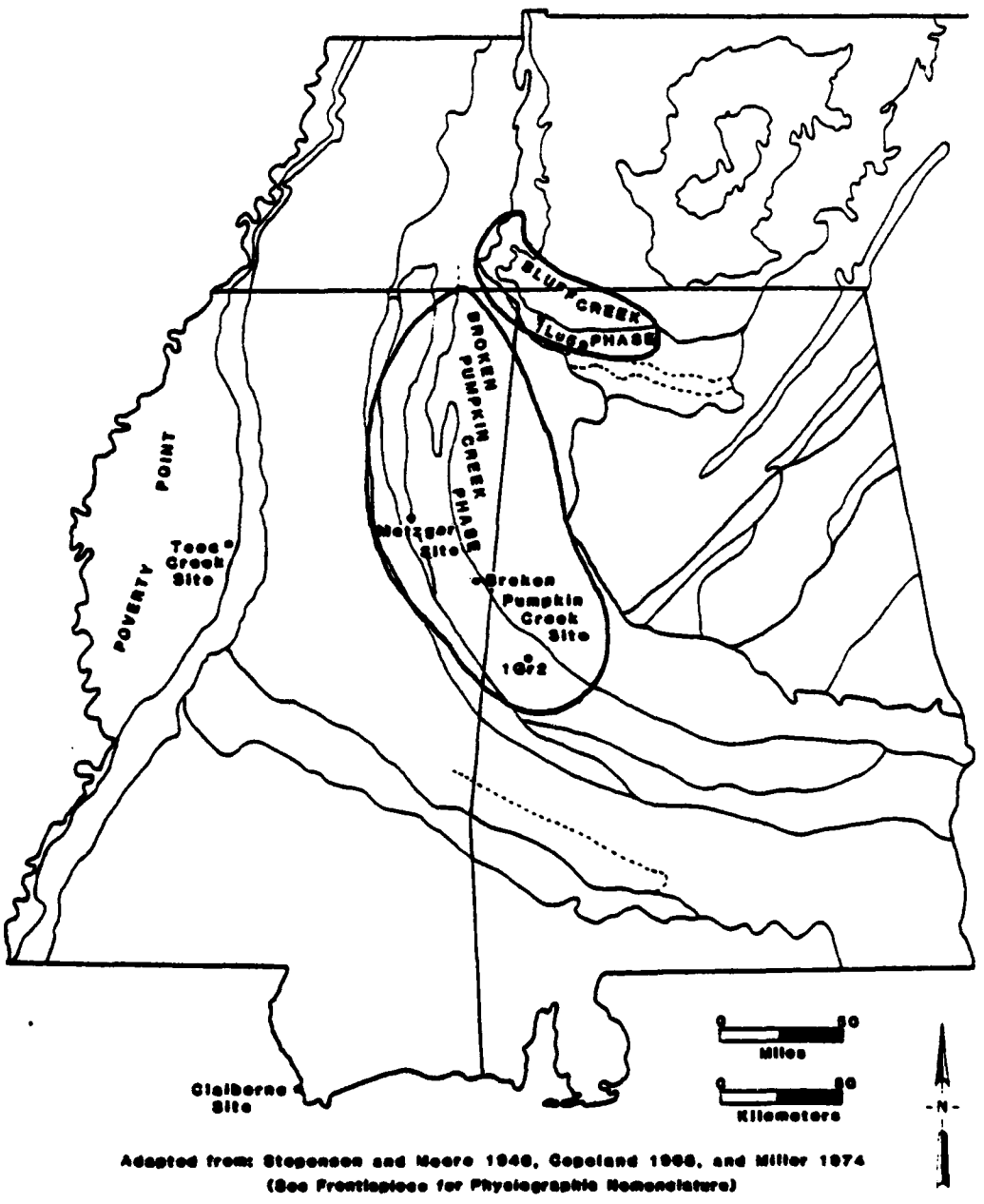

Selected Middle Gulf Formational Sites and Manifestations
BLUFF CREEK
LUCAS PHASE
BROKEN PUMPKIN CREEK PHASE
POVERTY POINT
Teoc Creek Site
Meltzer Site
Broken Pumpkin Creek Site
1672
Claiborne Site
Miles
Kilometers
N
Adapted from: Stoltman and Moore 1968, Copeland 1968, and Miller 1974
(See Frontispiece for Physiographic Nomenclature)

Figure 13.

Three other fiber tempered series have been defined within the Southeast. The earliest of these is the Stallings Island series, reported from the Georgia-Carolina coast (Fairbanks 1942, Sears and Griffin 1950, Stoltman 1972) and the lower Chattahooche River Valley (Fig. 13, Huscher 1959, McMichael and Kellar 1960, Jenkins 1978a). Stoltman (1972) has assigned a temporal range based on several radiocarbon dates of 2500 to 1000 B.C. for Stallings Island series ceramics.

Farther south along the Atlantic coast, the morphologically distinct Orange series is found throughout much of peninsular Florida but is concentrated along the St. Johns River. Orange series pottery has been dated from 2000 B.C. to 1000 B.C. (Bullen 1954, 1959). The third major fiber tempered series, the Norwood series of northern Florida, has been dated to around 1000 B.C. (Fig. 13, Phelps 1965).

Morphologically, the Wheeler series is most similar to the Stallings Island series of Georgia and South Carolina. Specifically, the simple hemispherical bowl vessel form and an array of random simple punctated decorations including small hemispherical depressions, circular depressions with conical base, hemiconical, semicircular, fingernail punctates and hollow cylinder punctates are found in both series (Sears and Griffin 1950). Two decorative modes found in the Stallings Island series are not present in the Wheeler series, the distinctive Stallings Island stab and drag decorative mode and the more rare incising and may postdate the initial formation of the Wheeler manifestation (Jenkins 1975b).

From stratigraphic tests made at Stallings Island, Bullen and Greene postulated three developmental stages for the Stallings Island ceramic series:

> After the initial plain period, simple punctating was introduced and vessels boldly marked with half moons, circles, and slight curves. Circles were probably made by a hollow reed and other marks by bone tools. Both random and straight line patterns were found but punctations were not placed extremely close to each other. A few sherds with slashlike incising were also found but not enough to justify a separate category. (Probably simple stamping). In the third stage, linear punctation or the stab and drag method was used and individual punctations are very close together (Bullen and Greene 1970:16).

These observations suggest that the punctated forms were manufactured during a period when the stab and drag modes were not. Although it is currently impossible to designate the absolute time of the three different Stallings Island periods proposed by Bullen and Greene, Stallings Island pottery was probably made from approximately 2500 B.C. until 1000 B.C. (Stoltman 1972:37,40). The proposed second stage in Stallings Island ceramic development, was the ceramic assemblage (plain and punctated) carried across the Coastal Plain to eastern Mississippi to form the earliest manifestation of the Wheeler series. Plain and punctated Stallings Island or early Wheeler pottery has been dated at around 1200 B.C. at two sites in Mississippi (Gagliano and Webb 1970:69, Connaway et al. 1977:107). Similar plain and punctated fiber tempered pottery has also been recovered from the Poverty Point site (Webb et al. n.d.).

Stratigraphic evidence at Site 1Lu59 indicates that dentate stamping appeared as a numerically prominent surface treatment only during the later part of the Wheeler continuum (Webb and DeJarnette 1942:126-130). At this time (ca. 800 B.C. to 500 B.C.) dentate stamping and plain were the two primary surface treatments. Punctated and simple stamped pottery were minorities. Dentate stamping is known from two other regions during this period. One of these could prove to be the source of dentate stamping in the Wheeler series. Dentate stamping appeared as part of the Refuge series along the Georgia-South Carolina coast between 1000 B.C. and 700 B.C. (Waring 1968, Peterson 1970, DePratter 1976). In the Refuge series, however, dentate stamping appears to be a minority surface finish (DePratter 1976:6). Another ceramic complex which includes dentate stamping as a major surface treatment is found one hundred miles south of the Gainesville Lake area. Here the Bayou La Batre series appeared in the Mobile Delta and lower Tombigbee regions. Bayou La Batre Stamped (Wimberly 1960), the major type of this series, has been dated by Trickey (1971:121) at 1140±200 B.C. There has, however, been some controversy over the acceptance of such an early date for Bayou La Batre. Based on similarities with the Tchefuncte series, it is postulated that Bayou La Batre and Tchefuncte are generally contemporaneous, beginning no earlier than 700 B.C. It is further suggested that late Wheeler and early Bayou La Batre groups participated in Tallahatta quartzite trade in the Tallahatta Hills physiographic district, thereby introducing the concept of dentate stamping to Wheeler potters. The dentate stamping in the Wheeler and Bayou La Batre series is morphologically almost identical. It is possible, therefore, that the trait of dentate stamping could have been borrowed from Bayou La Batre people since these complexes probably overlap temporally and their spatial distributions were tangential.

Another trait that appears in the Wheeler series but not in the Stallings series is the flat based beaker vessel form. This form is approximately the same shape as the St. Johns series flat based beaker of the Florida Transitional period (Bullen 1959, 1972). During the Transitional period (1000 B.C. to 500 B.C.), which was comtemporaneous with the Middle Gulf Formational period, both fiber tempered and the untempered chalky paste St. Johns Plain and Incised were manufactured in northern Florida, east of the Chattahoochee River. The presence of this pottery at the Claiborne site (Gagliano and Webb 1970, Fig. 5 D-F), and at the Poverty Point site (William Haag and Sharon Goad, personal communications 1980, Bullen 1972:25), indicates that groups making early Wheeler ceramics and early St. Johns ceramics could have been in contact with one another, thereby introducing the concept of the flat based beaker to Wheeler potters.

In the previous paragraphs, the known data relevant to the temporal and spatial dimensions of the Wheeler series were summarized. Basically, the parent complex of the Wheeler manifestation was the Stallings Island series, and, as a result of contacts with Bayou La Batre and St. Johns groups, dentate stamping and the flat based beaker were later added to the Wheeler ceramic inventory (Jenkins 1975b). Current evidence suggests that the development of the Wheeler series was a by product of trade and that steatite was one of the most frequent items traded. The geological occurrence of steatite is confined to the Piedmont region (Fig. 13). Steatite sherds and vessels, however, are found throughout the Coastal Plain, from

the St. Johns River area to as far west as Poverty Point. Work by Bullen and Bullen (1961) indicates that the steatite trade was active by Orange 3 times. At the Summer Haven site, a zone yielding Orange 3 ceramics and steatite sherds was dated at 1380±200 B.C. Gagliano and Webb (1970) report a cache of steatite vessels at the Claiborne site at the mouth of the Pearl River. This site produced Stallings Island (early Wheeler) and St. Johns ceramics along with numerous nonlocal lithics, and a wide variety of Poverty Point clay ball types that duplicate those found at the Poverty Point site. Such a wide variety of nonlocal materials (Gagliano and Webb 1970, Table 3) induced the speculations that Claiborne and the slightly earlier Cedarland site, adjacent horseshoe shaped middens, were trading stations.

> It appears, therefore, that occupants of the Cedarland and Claiborne villages were participating in a widespread trade network, up the Mississippi Valley and along the Gulf Coast, which seems to have intensified in Poverty Point times. There are evidences of direct contact between the Claiborne and Poverty Point sites; it seems probable that Claiborne was a regional center of importance in the commercial, secular and religious organization of Poverty Point cultural complex (Gagliano and Webb 1970:72)

Another cache of steatite vessels was found in a field adjacent to the Poverty Point site (Webb 1944). The vessel shapes, flat based beakers, are virtually identical to those from the Claiborne site and to Wheeler and St. Johns vessel forms. Further, several of the vessel lips were diagonally engraved with simple rectilinear designs also like those at the Claiborne site. These designs are similar to those found in Orange 4 ceramics and Stallings Island bone pins. Flattened lips bearing rectilinear incised decoration are documented during late Orange times (Griffin and Smith 1954:43). One steatite vessel fragment from Poverty Point depicted a bird with outstretched wings (Webb 1944, Fig. 31-1), possibly an antecedent form of the Hopewellian raptorial bird.

Whole steatite vessels or vessel fragments have been recovered from at least nine Poverty Point phase sites in Louisiana, from 11 sites in Mississippi, and from three sites in Arkansas (Webb 1977:35). Steatite samples from these sites were analyzed for trace elements using neutron activation to associate individual artifacts from a particular site to the original quarry source. With one exception, all specimens match quarry sites in Georgia or eastern Alabama, precisely documenting a segment of the Poverty Point interaction sphere (Smith 1981:120-125). Stallings Island groups may have been the primary steatite procurers in the steatite trade. Steatite quarries in Georgia and eastern Alabama are contiguous to Stallings Island ceramic distribution within the Chattahoochee drainage. The Chattahoochee River may have served as a convenient trade artery for the movement of steatite. Many of its tributaries drain the Alabama and Georgia Piedmont, where steatite outcrops are located. The steatite could then be moved farther by boat along the Gulf Coast. Stallings Island (early Wheeler) pottery and steatite have been recovered at the Claiborne site, a proposed trading station located at the mouth of the Pearl River on the Gulf Coast.

At approximately 1500 to 1000 B.C. a major center was established at the Poverty Point site (Gibson 1972, Webb 1977). This center may have been a central focus for the increased communication and trade across the Gulf Coastal Plain. The Poverty Point site is strategically located near the confluence of six major rivers, a position which would have allowed its inhabitants control over the flow of trade goods to other regions. Sites such as Claiborne may have served as subsidiary regional centers. The movement of goods such as galena from the upper Mississippi Valley (Walthall 1981, Walthall et al. 1982), copper from the Great Lakes area, steatite from the Piedmont, Tallahatta quartzite from south Alabama, novaculite and crystal quartz from Arkansas, as well as nonlocal Wheeler or Stallings Island and St. Johns ceramics all indicate that Poverty Point was probably an important trading or possibly a redistributive center. Winters (1968), Webb (1968, 1977), Gibson (1973, 1974, 1979), and Brasher (1973) have explored the possibility that the Poverty Point site functioned as a redistribution center at a chiefdom or complex tribal level of organization.

The development of the earliest ceramics, the Wheeler series, in Mississippi and Alabama was probably a by-product of the trade created by this center. In the following centuries, the Alexander and Tchefuncte series developed as the result of continued trade and other interaction networks across the Gulf Coastal Plain.

LATE GULF FORMATIONAL PERIOD
(500 B.C. - 100 B.C.)

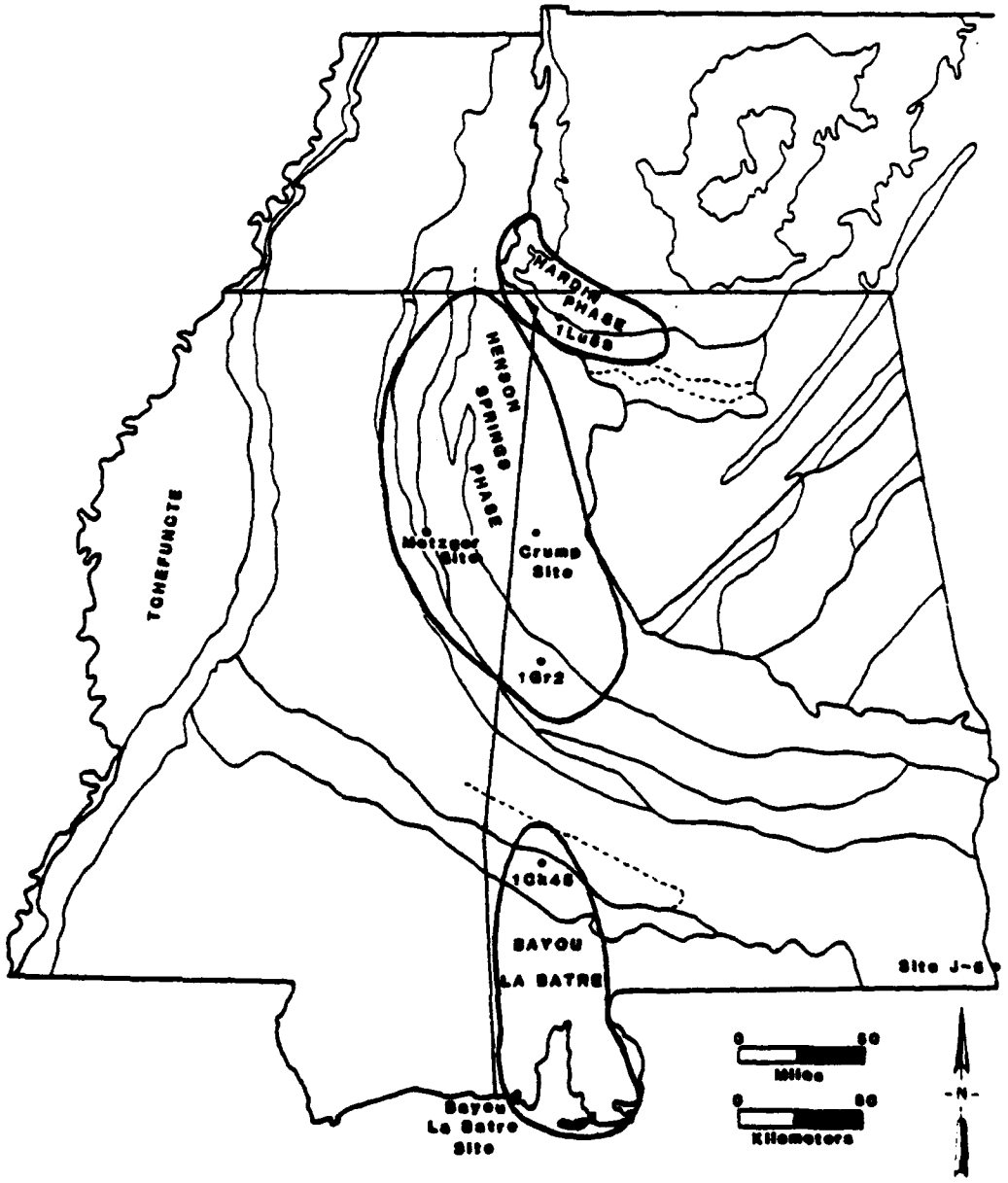
The Late Gulf Formational period is defined by certain ceramic developments within the Gulf tradition that took place throughout most of the southern Coastal Plain. Conditions favorable to these developments were present during the early and middle Gulf Formational periods when east-west trade across the southern Coastal Plain was accelerated (Walthall and Jenkins 1976) and geographically distinct groups exchanged ideas and materials. This exchange resulted in the recombination of many earlier Gulf tradition ceramic attributes, the formation of several new ceramic series and many new ceramic complexes.

The Late Gulf Formational period is characterized by three major events; the disappearance of fiber tempered pottery, the development of the related Tchefuncte and Alexander series on the western Gulf Coastal Plain, and appearance of the paddle stamped Southern Appalachian tradition Early Woodland Deptford pottery on the eastern Coastal Plain.

Henson Springs Phase

The Henson Springs phase, originally defined after excavations at the Crump site (DeJarnette et al. 1975a), represents the local manifestation of the Late Gulf Formational period and the Alexander variant (Fig. 14). The Crump site is located along a tributary of the Tombigbee River, 35 miles northeast of the Gainesville Lake area. The Henson Springs phase designation is provisional, because its variability within space and time are not well defined.

Selected Late Gulf Formational Sites and Manifestations



Adapted from: Stephenson and Monroe 1940, Copeland 1968, and Miller 1974
(See Frontispiece for Physiographic Nomenclature)

Figure 14.

Content

Ceramics

The sand tempered Alexander series are the diagnostic ceramics of the Henson Springs phase. Alexander ceramics from the Gainesville Lake area are decorated almost exclusively by incising and pinching. The incised motifs are primarily rectilinear and consist of chevrons, chevron filled triangles, diamonds formed by cross hatching, hexagons, and lines incised parallel to the rim. Curvilinear design motifs appear rarely in combination with a predominantly rectilinear motif. The pinched pottery includes both fingernail punctated and pinched decorations. This incised and fingernail decorated pottery conforms to the types Alexander Incised and Alexander Pinched, originally defined for the western Middle Tennessee Valley (Haag 1939). Minority types include Smithsonia Zoned Stamped, Columbus Punctated (Heimlich 1952), Crump Punctated (DeJarnette et al. 1975a), Mandeville Stamped, and reed punctated pottery.

Plain Alexander pottery, originally defined as O'Neal Plain, is often impossible to sort from Baldwin Plain (Jennings 1941), the plain ware of the Miller I and II ceramics. To remain consistent with Phillips' (1970: 26) rule of sortability, all plain sand tempered pottery was classified as a variety of Baldwin Plain in this study. Diagnostic rim sherds with nicks and/or bosses were classified as var. O'Neal. Several Alexander Incised varieties have been created based on distinctive motifs (Jenkins 1981).

It is currently impossible to document internal Alexander development, because no Alexander components have been found in good stratigraphic context. Sufficient numbers of features containing Alexander ceramics that could be seriated into a sequence of stylistic change have not been recorded. Evidence for Alexander vessel shape is incomplete at this time. The available evidence suggests that the basic shape for both the pinched and incised pottery is a large, straight sided vessel, usually with an excurvate rim. Globular vessels seem to be present also. Bases are usually flat and frequently have four podal supports. An unusual six sided vessel composed of three short sides and three long sides has been recently recovered from the Kellogg Village site. The base of this vessel is flat with six podal supports, three sets of two below each of the three short sides of the vessel (Atkinson et al. 1980:121-122). A common and distinctive feature of Alexander ceramics is the presence of bosses, immediately beneath and parallel to the lip, punched through from the interior, leaving a raised bump on the exterior. The hole on the interior is then smoothed over. The effect of this process is a line of bosses around the rim very similar to those found in Havana Hopewell pottery of Illinois (Griffin 1952:101-114).

Lithics

The lithic technology of the Late Gulf Formational Henson Springs phase suggests direct development from the Middle Gulf Formational Broken Pumpkin Creek phase. A predominance of local unheated stone continues as the major form of debitage. The use of exotic nonlocal stone, such as

Tallahatta quartzite, Camden and Fort Payne chert, for finished tools also continues.

The Flint Creek var. Tombigbee projectile point is diagnostic of the Henson Springs phase. This projectile point type was the predominant form at the Crump site, the type site of the Henson Springs phase (DeJarnette et al. 1975a). Bense (1981) has also found this form exclusively in a predominantly Alexander stratum in northeast Mississippi at Site 22It563. The Flint Creek var. Tombigbee projectile point was a common form at Site 1Gr2, the largest excavated Henson Springs phase component in the Gainesville Lake area (Ensor 1981a).

Subsistence

Very few Henson Springs phase food remains have been collected from good contexts within the Gainesville Lake area. The Kellogg Village site (Atkinson et al. 1980, Table 17) is the only Alexander component in the region which has yielded food remains from undisturbed contexts. This site is located within the Columbus Lake area, 25 miles north of the Gainesville Lake area. The contents of five Henson Springs phase features from the Kellogg Village were floated for floral recovery. The only plant remains recovered from these five features were hickory nuts. Although these people probably ate other plant foods, hickory nuts were a primary staple at least during the fall and winter months.

Animals represented in these five Kellogg Village features included opposum, snake, bird, unidentified mammal, bowfin, and other unidentified fish. Mussel shells were present in all but one of these features (Atkinson et al. 1980:228). No identified deer bone was present in any of these features.

Settlement Patterns

Henson Springs phase settlement patterns reflect a direct continuation of the preceeding Broken Pumpkin Creek phase patterns. The size and artifact density of seven identified Henson Springs phase components are directly comparable to Broken Pumpkin Creek phase components. Henson Springs phase components in the river valley are characteristically small with a notable lack of pits and low artifact densities, with the artifacts usually widely scattered over the site. The sites have the definite appearance of small impermanent camps, occupied by only a few individuals.

A few components have been located along tributaries away from the river valley. Some of these sites are larger and have higher density artifact accumulations. The Broken Pumpkin Creek site, located west of the river valley, may represent a semipermanent base camp similar to the earlier Broken Pumpkin Creek component. Another probable base camp is located east of the river valley in the Fall Line Hills area. The Crump site is the type site for the Henson Springs phase and is located along a tributary of the Buttahatchee River which flows ultimately into the Tombigbee River. Excavation at this site revealed a large Alexander component with significant midden accumulation. Post holes were present, al-

though no structures could be defined. Pits were more numerous than in river valley components, but they were not plentiful. Unfortunately, because no floral or faunal remains were recovered, the kinds of resources exploited and the season of occupation in the Fall Line Hills environment is not known (DeJarnette et al. 1975a:1-37).

Two generalized kinds of sites comprised the Henson Springs settlement system. Small transitory camps were located within the floodplain of the river and its tributaries. Larger sites along the tributaries appear to have been semipermanently occupied by larger groups. The seasonal round may have been similar to that proposed for the Broken Pumpkin Creek phase.

Space, Time, and External Relationships

The Henson Springs phase spatial distribution is tentatively restricted to the central Tombigbee drainage including the adjacent Warrior River Valley and to the upper Tombigbee drainage. This phase represents the regional manifestation of the Alexander variant (Fig. 11).

Present estimates of the temporal position of the Alexander series and the Henson Springs phase place its inception around 500 or 600 B.C. and its demise at approximately 100 B.C. This estimate is based on two radiocarbon dates from the Tombigbee drainage and relative dating with adjacent regions where Alexander and related ceramics have been dated. The only dated Alexander ceramics from the central Tombigbee drainage were recovered at the Kellogg Village site, approximately 25 miles up river from the Gainesville Lake area. Feature 136 at that site yielded a partial six-legged beaker-shaped vessel of Alexander Incised var. Negro Slough with a radiocarbon date of 760±70 B.C. (Atkinson et al. 1980:195). A radiocarbon determination from Site 22It563, a predominantly Alexander site in the upper Tombigbee drainage, yielded a date of 360±50 B.C. (David Dye, personnal communication 1981).

Three other dates have been obtained for Alexander ceramics outside of the Tombigbee drainage. Recent investigations at the Sakti Chaha site in Hardin County, Tennessee in the Tennessee Valley yielded a date of 400±75 B.C. from a pure Alexander midden (Dye 1980:104). In the lower Mississippi Valley, a date of 250±110 B.C. was obtained from the midden at the Tchefuncte site (Phillips 1970:957, Crane and Griffin 1959) where Alexander pottery appeared as a minority in association with Tchefuncte ceramics (Ford and Quimby 1945:64-65). A somewhat questionable date for Alexander pottery has been secured from the Alligator Lake site on the northwest Florida coast. At that site Alexander ceramics were found in apparent association with Deptford ceramics. A date of 610±80 B.C. was obtained from the midden. Another date of 1170±125 B.C. was obtained from an underlying component that produced plain fiber tempered pottery (Lazarus 1965:109). Also in association with the latter sample is a vessel (Lazarus 1965, Fig. 6) that is probably an early variety of Santa Rosa Stamped. This type of stamped pottery was found by Wimberly (1960:74-76) to be associated with the Bayou La Batre series and has been dated at 1140±200 B.C. (Trickey 1971:121). This date is consistent with the 1170 B.C. date obtained by Lazarus. Lazarus (1965:109) incorrectly assigned

the vessel to the Alexander component and described it as a net impressed type of Alexander pottery. There is, however, no net impressed pottery known to be associated with the Alexander series.

During the Middle Gulf Formational period the stage was set for the development of the ceramic series that define the Late Gulf Formational period. Several geographically distinct Coastal Plain groups producing Gulf tradition ceramics had developed trade and other relationships by 1000 B.C. The Alexander series was one of the ceramic series that developed as a result of those contacts.

Stylistically, the development of the Alexander series appears to be a result of the combination of modes from several earlier Middle Gulf Formational period ceramic series. The Alexander series appears to be an amalgamation of modes from the St. Johns, Bayou La Batre, Wheeler and possibly the Awendaw series. Perhaps the most striking feature of the Alexander ceramics is the array of rectilinear incised decorations. The origin of the great majority of these motifs can be found in the early St. Johns Transitional period ceramics of Florida (Bullen 1959, 1969, 1972). Many of these same motifs also appear on lower Mississippi Valley Tchefuncte ceramics (Griffin 1946). Another distinctive Alexander attribute, possibly present in early St. Johns, is a series of bosses punched through from the interior, just beneath the rim. Rim sherds exhibiting similar bosses referred to as side lugged (Atkins and MacMahan 1967, Fig. 6i, 6j) were found at the Zabski site in east central Florida. This early St. Johns component was radiocarbon dated at 960±80 B.C. (Atkins and MacMahan 1967:140). This date is consistent with the only other early St. Johns date of 1195 B.C. from Site J-5 on the lower Chattahoochee River (Bullen 1958:337-341).

Another earlier ceramic series that must have contributed substantially to the development of the Alexander series is the Bayou La Batre series (Wimberly 1960). These ceramics illustrate a wide variety of podal support configurations. The Bayou La Batre series, centered in the Mobile Bay-Delta region, must represent one of the earliest appearances of podal supports in the Southeast and may be the source of this trait in the Alexander series. The coarse sand tempered Alexander paste may also have its origins in Bayou La Batre, which has a very similar paste during the earlier part of its development.

The trait of pinching in the Alexander series may have its origin in the Awendaw series found along the South Carolina Atlantic coast. The most common design found on Awendaw pottery is a linear arrangement of individual impressions made with a thumbnail and fingernail, very much like Alexander Pinched. Random punctation also occurs frequently (Waddell 1963, 1965).

Although the Alexander series follows the Wheeler series temporally in both the Tombigbee and western Middle Tennessee Valley, little developmental continuity has been demonstrated between these two series. The Wheeler series seems to have contributed very little to the ceramic inventory of the Alexander series. Only three attributes may represent continuity; the beaker vessel form, dentate stamping, and punctation. Although the beaker was the major Wheeler vessel form, it was only one of many

vessel shapes found in the Alexander series. Dentate stamping was the major decorative treatment late in the Wheeler continuum. By Alexander times, however, dentate stamping appeared in Mandeville Stamped and as part of the design element of Smithzonia Zoned Stamped, both minority types. Several types of punctation that appear as minorities during late Wheeler times, appear in the Alexander series. Fingernail punctation, rare in Wheeler assemblages, became a major decorative treatment during Alexander times. Reed and hemicoidal punctations, both rarely found on late Wheeler ceramics, were also minority Alexander decorations. The Alexander rectilinear incising, podal supports, and rim bosses are virtually absent in Wheeler series ceramics.

The Alexander series has a wide distribution. The major concentrations are the western middle Tennessee Valley and the upper Tombigbee drainage, where the Alexander series temporally follows the Wheeler series. Alexander ceramics have also been found as minority types in the lower Mississippi Valley (Ford and Quimby 1945), the northwest Florida Gulf Coast (Lazarus 1965, Willey 1949), the Alabama River (Jenkins and Paglione 1981) and the Mobile Bay-Delta area (Wimberly 1960) associated in each instance with local ceramic complexes. Perhaps this widespread distribution of the Alexander series reflects its association with widespread trade networks.

The Black Sand ceramic series (Griffin 1952:98-99), found to the north in Illinois, is closely related to the Alexander series. Similarities include rectilinear incising and bosses punched through from the interior. The rectilinear incising was usually applied over a cord marked surface treatment. This combination of incising and cord marking is one of the first occurrences of the combination of Gulf tradition and Woodland ceramic tradition attributes in a single complex. Rectilinear incising and the punched through bosses may have diffused up the upper Mississippi drainage during the earlier part of the late Gulf Formational period. Chapman (1980:20) places the appearance of Black Sand pottery at ca. 500 B.C. based on dates from the Peisker site (Perino 1966:85). The Black Sand types develop directly into the Morton complex types, which are essentially rim modes. The Morton complex then develops into the early Middle Woodland Havana complex (Griffin 1952:100). The Black Sand series thus links Alexander and Illinois Hopewellian pottery and may be the reason for fairly specific similarities between Alexander and some Illinois Hopewell ceramics, i.e., Alexander to Black Sand, Black Sand to Morton, and Morton to Havana.

CHAPTER V

WOODLAND STAGE

In this chapter the Woodland stage is defined by the appearance of cord and fabric marked pottery, an elaborate burial ceremonialism, a marked increase in trade and barter, the wide distribution of distinctive art styles, and the introduction of agriculture. These are essentially the defining characteristics of Woodland as discussed by Willey (1966:267) and Griffin (1966:117).

At approximately 100 B.C., fabric marked pottery, and soon thereafter cord marked pottery, signaled the appearance of the Miller variant in the Tombigbee drainage. These surface treatments constitute a pronounced change from the preceding Gulf tradition ceramics and serve as a hallmark for the beginning of the Woodland stage in the Tombigbee drainage.

Cord marked pottery is associated with Caldwell's (1958:23) Northern tradition. Fabric marked pottery is associated with his Middle Eastern tradition. The origin of these ceramics north of the Fall Line and Coastal Plain is therefore distinct from the origin of Gulf tradition ceramics. Cord marked and fabric marked pottery have been dated earliest in an area bounded to the north by New York state (Ritchie 1965) or Ontario (David Brose, personal communications 1982) and bounded to the south by the upper Tennessee River Valley (Lafferty 1978). In the upper Tennessee Valley cord and fabric marked pottery first appear between 1000 B.C. and 700 B.C. Subsequently, they must have spread southward and westward down the Tennessee River and other river valleys draining the Appalachians.

Within the Tombigbee drainage, burial mounds appear contemporaneously with the first appearance of cord and fabric marked pottery. Adena burial mounds were constructed as early as 500 B.C. within the Ohio Valley (Willey 1966:268). Adena subsequently developed into the later Hopewell in the Ohio Valley which was contemporaneous with Miller I and Miller II in the Tombigbee Valley.

The Woodland stage is divided temporally into early, middle, and late periods in Eastern Woodlands prehistory. The initial development of Woodland does not appear south of the Fall Line. The term Early Woodland period, therefore, is not applicable to the Tombigbee drainage. The Early Woodland time frame (1000 B.C. - 100 B.C.) in the south is occupied by the Middle and Late Gulf Formational periods in the western Coastal Plain. The most elaborate expression of the Early Woodland period is found in Ohio, where the Adena culture developed. Middle Woodland Hopewellian cultures appear in both the Ohio and Illinois Valleys by 200 B.C. (Griffin 1978:63).

Within the Tombigbee drainage, the Woodland stage begins during the Middle Woodland period at about 100 B.C., and lasts through the end of the Late Woodland period at A.D. 1100. Throughout the Woodland stage within the central and upper Tombigbee drainage, plain, cord marked and fabric marked ceramics comprised the major surface treatments. There were,

however, changes in the percentages of these treatments and changes in temper and in minority and traded types during the Woodland stage. There was also an increase in population suggested by an increase in the number and size of sites. There were further accompanying changes in house types, burial practices, lithic complexes, and subsistence throughout the Woodland stage.

MIDDLE WOODLAND PERIOD
(100 B.C. - A.D. 650)

Within the middle and upper Tombigbee drainage, the beginning of the Middle Woodland period is marked by the first appearance of burial mounds and Saltillo Fabric Marked pottery. Slightly later, Furrs Cord Marked was added to the ceramic inventory. During the Middle Woodland period the inhabitants of this region were participating in the Hopewellian Interaction Sphere. The period was characterized by the development of numerous regional cultural groups communicating within and beyond the boundaries of their respective regions. The groups participating in this network were procuring and exchanging local and nonlocal goods. Some of these goods were buried with high ranking members of the local society. This widespread information network resulted in:

> . . . striking regional differences in the secular, domestic and non-mortuary aspects of the widespread Hopewellian remains; and an interesting, if short, list of exact similarities in funerary usages and mortuary artifacts over great distances (Caldwell 1964:138).

Within the Tombigbee drainage, this phenomenon is demonstrated by numerous burial mounds often containing nonlocal artifacts such as projectile points, pottery vessels, greenstone celts, platform pipes, copper, galena and silver plated panpipes (Cotter and Corbett 1951, Jennings 1941, Bohannon 1972).

The Middle Woodland period has been divided into Miller I and Miller II phases based primarily on demonstrable variability in content through time. Space is a less important defining characteristic of the two phases since Miller II follows Miller I within the same region. It is nonetheless a defining characteristic of the two phases. These phases can be further analyzed into temporal, and possibly subregional, subphases based primarily on ceramic diversity which is summarized in the following pages. The articulation of the Gainesville Lake area ceramic sequence with the remainder of the Tombigbee drainage is presently somewhat awkward because type-variety nomenclature has not yet been applied to the remainder of the drainage.

Miller I Phase

The Miller I phase is the earliest manifestation of the Middle Woodland period and the Miller cultural tradition in the central and upper Tombigbee River drainage. Evidence suggests that Miller I did not develop out of the earlier Alexander variant, but probably appeared as a result of

either population or trait unit movement from the north. Miller I is most closely related to other cultural manifestations to the north.

Content

Ceramics

The Miller I phase is ceramically defined by the appearance and dominance of the types Saltillo Fabric Marked and Baldwin Plain (excluding var. O'Neal). The type Furrs Cord Marked appears slightly later than the initial appearance of the Saltillo Fabric Marked and Baldwin Plain types. Three subphases can be distinguished from the relative frequencies of these three types.

During the early Miller I Bynum subphase, the only types manufactured were Baldwin Plain and Saltillo Fabric Marked. This subphase is best represented at the Bynum site Mound D (Cotter and Corbett 1951:24) and at Site 22Le53 (Jennings 1941:205). At Bynum, Baldwin Plain comprised 76.1 percent of the total ceramics and Saltillo Fabric Marked comprised 22.6 percent within Mound D. No Furrs Cord Marked was present below the 1.0 foot level. Although no reliable radiocarbon dates are currently available, the Bynum subphase is estimated to date from approximately 100 B.C. to A.D. 1. This temporal assignment is based partially on the priority of early Miller I over middle Miller I. The middle Miller I Pharr subphase can be relatively dated with early Marksville between A.D. 1 and A.D. 100. The early Miller I temporal assignment of 100 B.C. to A.D. 1 is supported by relative dating with the lower Mississippi Valley where components dominated by Fabric Marked pottery were assigned a date prior to A.D. 1 (Phillips 1970:878).

The middle Miller I Pharr subphase is defined by the initial appearance of Furrs Cord Marked as a minority type in association with Saltillo Fabric Marked and Baldwin Plain. Other middle Miller I Pharr subphase minority types include Basin Bayou Incised, Alligator Bayou Stamped, and possibly Mound Field Net Marked. These latter types are more common in the Middle Woodland complexes of the lower Tombigbee River, Mobile Bay, Delta and northwest Florida regions (Wimberly 1960, Willey 1949). After its initial appearance, Furrs Cord Marked increased in frequency until it became a major type during the Miller II phase. During the middle Miller I Pharr subphase, Furrs Cord Marked accounted for no more than 12 percent of the total ceramic complex at any site. Pharr subphase components have been excavated at the Pharr site (Bohannon 1972), Mounds A and B at the Bynum site (Cotter and Corbett 1951), the Okashua site (Wynn and Atkinson 1976) and at Site 1Gr2 in the Gainesville Lake area (Jenkins and Ensor 1981). Within all of these components, Furrs Cord Marked does not exceed 12 percent of the ceramic assemblage in any context. The initial appearance of Furrs Cord Marked and the approximate temporal position of the Pharr subphase is best dated at the Pharr site. On the surface of the burial platform in Mound E, a miniature Marksville Incised var. Marksville vessel was found next to a crematory pit. Marksville Incised var. Marksville has been securely dated to the early Marksville period, A.D. 1 to A.D. 200, in the lower Mississippi Valley (Phillips 1970:111, Toth 1979:194). A broken Furrs Cord Marked vessel was recovered from the

fill of the Mound E platform. Other ceramics on the Pharr Mound E platform include a miniature Baldwin Plain vessel, three miniature sand tempered, zone stamped (Alligator Bayou Stamped) vessels, a miniature Flint River Brushed vessel, and a partial Saltillo Fabric Marked vessel. Feature 12, also dug from the platform surface, contained a miniature Flint River Cord Marked vessel (Bohannon 1972, Table 1, Fig. 7). As will be discussed later, the association of these various ceramic types allow a temporal alignment of the Pharr subphase with cultures to the east and west.

The late Miller I Craigs Landing subphase is characterized by a further increase in the relative amount of Furrs Cord Marked. The most thoroughly excavated late Miller I component was located at the Craigs Landing Site, Site 1Gr2. A compact midden 12 m (40 ft) to 15 m (50 ft) in diameter was encountered in the southeastern portion of the site. The zone containing this late Miller I component was 15 cm (6 in) to 21 cm (8 in) thick and stratigraphically underlay the Miller III Cofferdam subphase component. The ceramics contained within this midden consisted of approximately 40 percent Baldwin Plain var. Blubber, 36 percent Saltillo Fabric Marked var. Tombigbee, 20 percent Furrs Cord Marked var. Pickens, and about 2 percent Saltillo Fabric Marked var. China Bluff. Minority types that appear in greater frequency along the lower Tombigbee (Wimberly 1960) also appeared in this midden. These include Basin Bayou Incised vars. River Bend, Fenache Creek, and West Greene; Alligator Bayou Stamped vars. Goodson's Ferry, River Bend, and Sumter; Santa Rosa Stamped var. Unspecified; and Santa Rosa Punctated var. Unspecified. These minority types together comprise less than 3 percent of this ceramic complex. Five Marksville Stamped var. Manny trade sherds and three Marksville Incised var. Unspecified sherds were also found in stratigraphic association with this component (Jenkins 1975a, Table 19). Marksville Stamped var. Manny has been dated from A.D. 200 to A.D. 400 in the lower Mississippi Valley late Marksville period (Toth 1979).

Miller I phase vessel shapes are not as well documented as those of the later Miller II and III phases. There are some differences in the Baldwin Plain vessel shapes that are either spatially or temporally significant. In the early and middle Miller I components excavated by Cotter and Corbett at the Bynum site, the deep hemispherical bowl with a rim that meets the vessel wall at a right angle was the most common vessel form (Cotter and Corbett 1951:17). This form was also present in the middle Miller I components at the Pharr site, although the approximate degree of frequency is not clear (Bohannon 1972:26). The everted rim is rare farther south in the Miller I components excavated in the Gainesville Lake area. Other vessel forms that appear consistently are the hemispherical bowl with an inverted rim and globular jars with slightly everted rims. Because of the high frequency of everted rims in the upper Tombigbee drainage, the fine sand tempered Baldwin Plain in the central Tombigbee drainage has been referred to as var. Blubber. The upper Tombigbee Baldwin Plain with the everted rim has been referred to as var. Baldwin. Saltillo Fabric Marked is the next most numerous type during the Miller I phase. Vessel forms of this type demonstrate less variability in space and time. The only vessel shape recorded for this type is the large conoidal jar with either a straight or slightly outflaring rim (Cotter and Corbett 1951:18). Furrs Cord Marked also seems to have fairly consistent

vessel shapes throughout the Miller I phase. The major vessel shape is a conoidal to slightly globular jar with an inslanting or direct rim. No appendages are noted for these types during the Miller I phase. The major vessel shape of Basin Bayou Incised and Alligator Bayou Stamped seems to be the hemispherical bowl with slightly restricted orifice.

Lithics

Excavations within the Gainesville Lake area, primarily at Site 1Gr2, indicate that a new stone technology was used by Miller I peoples. Thermal alteration appears to have been a basic adaptive strategy to the use of local nodular cherts of the Tombigbee River gravel bars for lithic manufacture. The practice of heat treating to improve flaking quality became an integral procedure in the production of projectile points and other tool forms. When heated at progressively hotter temperatures, the naturally occurring yellow chert cobbles are transformed to deeper shades of red. The use of exotic stone appears to decrease dramatically in the Miller I phase, although it is still used to a small degree (Ensor 1980: 84-87).

Several projectile point styles were employed during the Miller I phase. Miller I projectile point forms have been grouped into two major morphological clusters, the lanceolate expanded haft cluster and the lanceolate spike cluster. The expanded haft cluster projectile points characteristically have excurvate to straight blade edges. The most prominent Miller I type of this cluster is the Mud Creek projectile point (Ensor 1981a:152-156), a frequent type at the Bynum site (Cotter and Corbett 1951, Plates 10 and 13) the Okashua site (Wynn and Atkinson 1976, Plate 6) and Site 1Gr2 (Ensor 1981a). Ensor (1981a) estimates a temporal placement of 100 B.C. to A.D. 400, based on recurrent associations of the expanded haft cluster type with Miller ceramics.

The major type of the lanceolate spike cluster, which appears in Miller I contexts, is the Bradley Spike projectile point, a narrow, thick lanceolate form with a predominantly contracting excurvate base. At Sites 1Gr2 and 1Pi61, spike forms appear with Miller I and Miller II ceramic complexes. There is a tendency, however, for the tapered shoulder cluster Tombigbee Stemmed forms to appear in the late Miller II Turkey Paw subphase. At Site 1Gr2, lanceolate spike forms comprised 18.4 percent of the stemmed projectile points. Lanceolate spike forms comprised only 4.3 percent of the stemmed projectile points in the Turkey Paw component at Site 1Pi61. Athough the exact temporal distribution of the Tombigbee Stemmed and lanceolate spike forms is not known, it is probable that they intergrade (Ensor 1981a).

Subsistence

The best Miller I subsistence data is from the faunal analysis of the 1974 season recoveries at Site 1Gr2 (Curren 1975) and the analysis of the faunal and floral material recovered from one season of extensive excavation at Site 1Gr2 (Woodrick 1981, Caddell 1981a). Site 1Gr2 contained relatively small early Miller I Bynum subphase and middle Miller I Pharr

components and a larger late Miller I Craigs Landing subphase component (Jenkins and Ensor 1981).

Faunal analysis indicates that white-tailed deer comprised 95.2 percent by bone weight of the Bynum subphase faunal assemblage at Site 1Gr2. Other mammals comprised only 1.2 percent of the faunal assemblage. Turtle comprised 1.7 percent, bird 0.9 percent, and fish 1.0 percent. Mussels were also eaten during the Bynum subphase. The density of shell in those features was 55.5 g per cubic foot (Woodrick 1981, Table 37).

Deer continued to be the most important faunal resource during the late Miller I Craigs Landing subphase as reflected in the late Miller I midden at Site 1Gr2 (Woodrick 1981, Table 20; Curren 1975, Table 13).

Plant food remains from Miller I contexts at Site 1Gr2 consist almost entirely of hickory nut and acorn fragments. One persimmon seed, one wild bean seed, and one grass seed have also been recovered (Caddell 1981a, Tables 12-13).

Settlement Patterns

At least three different types of sites can be identified during the Miller I phase. Base camps appear for the first time in the Gainesville Lake area of the river valley. These are identified by a dark organically stained midden containing a large number and variety of ceramics and lithic debris, along with some shellfish and bone. Transitory camps are identified by the lack of any midden accumulation and only a sparse scattering of ceramic and lithics. Lithics tend to be relatively more numerous than ceramics at these sites. The third type of site that appears during the Miller I phase is the ceremonial center, which may consist of one to six mounds and usually an associated base camp.

Present evidence suggests that these people were participating in a central based wandering type of settlement system (Beardsley et al. 1956). This settlement pattern seems to be similar to the earlier Henson Springs phase. The Miller I phase base camps, however, also occur within the river floodplain. Base camps at the Bynum and Pharr ceremonial centers are located on smaller tributaries some distance from the river. Some evidence for the seasonal round has been obtained from excavated base camps, such as at Site 1Gr2. During the sedentary season, subsistence was derived primarily from an efficient exploitation of floodplain forest products and deer, supplemented by fish, shellfish, and turtle from the river and sloughs. Floral and faunal recoveries from Site 1Gr2 suggest that the sedentary season was probably during the late summer and fall (Caddell 1981a:32). During the late summer and early fall, shellfish could be more easily collected because the river is at the yearly low at this time. Hickory nuts and acorns also become available in the early fall. A similar pattern of exploitation of the creek floodplains at the Bynum and Pharr sites is probable. In some cases, however, the base camps may have been occupied year round by a segment of the population, possibly older people and children. Preference for base camp locations above flood levels may indicate that they were also occupied in the late winter and spring.

During the winter through spring wandering season, the community separated into small groups of extended or nuclear families. Transitory camps may represent the hunting and foraging expeditions of these smaller groups. During this time, the group's activities paralleled those of restricted wanderers (Beardsley et al. 1956), taking advantage of seasonally available wild foods.

Flood potential and soil texture, in part, governed the location of sites within the floodplain. All larger sites, base camps, and most smaller sites are situated at least 6 to 7.6 m (20 to 25 ft) above the normal level of the river, indicating the selection of site locations that rarely flooded. During the Miller I phase habitation sites were located on fine sands (Jenkins et al. 1975).

House Forms

The best and perhaps the only available evidence pertaining to Miller I house forms is from the Bynum site (Cotter and Corbett 1951). The Bynum site is a large Middle Woodland ceremonial center occupied during the early Miller I Bynum and middle Miller I Pharr subphases. The site consists of a 2.8 ha village area including six conical burial mounds.

Seven circular or ovate structure patterns were found during excavations in the village area. All of these structure outlines were arranged in a linear northwest to southeast pattern across the site. All of these structures were large, ranging in size from 10.67 m (35 ft) to 23.77 m (78 ft) in diameter. Ceramic analysis of the post hole contents indicated that all of these structures were occupied during the early Miller I and/or the middle Miller I subphases. An eighth structure was not within the northwest to southeast alignment of the earlier Miller I structures found at the site. Ceramic analysis of this structure indicates it may have been built much later, during the Miller III phase. Internal features within these structures were rarely identified, partially because of the extensive plowing and sheet erosion of the site's surface. Internal features, when present, usually consisted of small basin shaped fire pits (Cotter and Corbett 1951:11-14, 51, Figs. 2 and 5).

At the Okashua site several concentrations of post holes were identified, but no structures were defined. Those post hole clusters at the Okashua site may represent the remains of lean-to type habitations, rather than more permanent structures (Wynn and Atkinson 1976, Fig. 14).

Ceremonialism

During the Miller I phase, the Tombigbee drainage inhabitants began participation in what has been termed the Hopewellian Interaction Sphere (Caldwell 1964). This interaction network included interregional procurement and exchange of local and nonlocal items. Ultimately, some of these goods were buried with high ranking local group members. There were striking regional differences in the secular and nonmortuary aspects of local groups. Some similarities in funerary usages and mortuary aspects however, appeared over much of the eastern United States (Caldwell 1964:

138). Local population size, as well as the degree of social development and organization, no doubt, influenced the ceremonial complexity and participation in the exchange networks of each local group.

Within the upper Tombigbee drainage, two mound clusters have been excavated. Data from both of these clusters indicate that the Miller groups were actively participating in Hopewellian ceremonialism. At both the Bynum (Cotter and Corbett 1951) and Pharr (Bohannon 1972) Mounds, foreign ceramics and nonlocal worked copper, galena, and chert were found, indicating participation in some form of panregional network. The location of the Pharr and Bynum Mounds on the Natchez Trace may have facilitated interregional exchange. Myer (1928:811) identified this trace as an ancient Indian trail in use when the first whites entered the region. Such trails, long known from oral history, could have been interregional exchange routes.

Five of the six conical burial mounds present at the Bynum site were excavated by Cotter and Corbett. Mounds E and F, however, had been previously disturbed, so that they yielded little or no information (Cotter and Corbett 1951:1). The remaining three mounds contained considerable information pertaining to Miller I phase ceremonialism.

Mound A at the Bynum site contained a central feature consisting of two horizontal, parallel logs, lying on a burned platform. Between the logs were one extended and three flexed burials. Burial 1 was adorned with a pair of double cymbal-type copper ear spools. Burials 2, 3, and 4 were in situ cremations (Cotter and Corbett 1951:6).

The central feature of Mound B at the Bynum site was a large oval pit. Around the outside edge of this pit were numerous parallel small logs, and 16 large posts were set in the pit floor (Cotter and Corbett 1951, Fig. 3), suggesting that a charnel house had been constructed over the primary pit. A smaller subpit extended below the primary pit floor. The walls of this pit were burned bright red and probably represent a cremation pit. On the floor of the primary pit were three human cremations intermixed with ash and accompanied by an L-shaped row of 29 stone celts and a cluster of nine Snyders projectile points. An in-flesh burial lay on its back near the east rim of the pit. Also in the primary pit were two pairs of copper ear spools, a piece of galena, and two fragments of marine shell. The subpit contained one cremation and a cluster of eight Snyders projectile points (Cotter and Corbett 1951, Plate 5). Because none of the artifacts in the primary or subpit show any evidence of fire damage, the secondary placement of the in-flesh burial and cremated remains may have taken place after the charnel house had been burned (Cotter and Corbett 1951:8).

The central feature of Bynum Mound D was a rectangular pit with a series of small parallel logs, similar to those in Mound B, situated around the western side. This feature probably represents the remains of a charnel house, similar to that of Mound B, supported by a frame of four stout posts set outside the primary pit. A single polished celt was the only artifact in the primary pit. A smaller circular subpit was sunk beneath the floor of the primary pit. Within this pit, which had been intensively fired, lay the cremated remains of an undetermined number of

individuals. The only associated artifacts were one copper ear spool and a rolled copper bead (Cotter and Corbett 1951:9).

The relative temporal position of these mounds within the Miller I phase can be assigned from variation in their ceramic content. Baldwin Plain and Saltillo Fabric Marked dominated the ceramics from all excavation units in Mounds A, B, and D. Furrs Cord Marked was present in the upper levels of Mound A and in all levels of Mound B but was more frequent within the surface to one foot level. Within Mounds A and B, Furrs Cord Marked comprised less than 6.8 percent of the total, and this type was completely absent from Mound D, except for one sherd in the 0.0 to 1.0 ft level. Mound D, therefore, was probably the first mound constructed followed by Mounds A and then B (Cotter and Corbett 1951:22-34). Mound D, referred to earlier as a Bynum subphase component, is characterized by only Saltillo Fabric Marked and Baldwin Plain. Mounds A and B were assigned to the Pharr subphase, characterized by the addition of a small amount, usually less than 10 to 12 percent, of Furrs Cord Marked.

The second excavated Miller I ceremonial center is the Pharr site, a complex of eight Middle Woodland mounds. Four of these, Mounds A, D, E, and H were excavated by Charles Bohannon (1972). All of the excavated Pharr Mounds date to the middle Miller I Pharr subphase.

Mound A at the Pharr site is a conical mound with a central crematory feature, a rectangular flat bottomed pit. Three thin lenses of calcined human bone and charcoal lay on the floor of the pit. The only artifact in the pit was a deteriorated copper object (Bohannon 1972:10-11).

Mound D at the Pharr site was a conical mound also containing a central crematory feature, an oval area paved with flat sandstone slabs laid down on the prepared mound base, which had been burned clean. A broken copper spool and a few burned human bone fragments were found on the paving. Another burial beyond the edge of the pavement consisted of a crumbled skull accompanied by two copper spools (Bohannon 1972:13-14).

Mound E at the Pharr site was a low conical mound that had been built in three stages. The central feature was a low oval platform. Three features had been excavated into the surface of the platform. Feature 17 was a circular fired crematory. At the edge of the crematory, and resting on the platform, was a miniature Marksville Incised var. Marksville vessel. Other ceramics found on the platform surface were a miniature Flint River Brushed vessel, three miniature sand tempered zone-stamped vessels, one miniature Baldwin Plain vessel, and a partial Saltillo Fabric Marked vessel. Other artifacts from the platform surface included a slab of wood covered with sheet copper, a silver plated panpipe, and burned bone. Features 18 and 19 were rectangular pits originating at the surface of the platform. Feature 18 contained a cache of projectile points, typed by Bohannon as Types A and K. Both are stemmed types that closely resemble types of the lanceolate spike cluster identified by Ensor (1981a) as typical of Miller I farther south in the Gainesville Lake area. Lanceolate blades and two galena nodules were also found in the same pit. Feature 19 contained no artifacts. There were, however, log stains in the base of the pit. Features 10 and 12 were rectangular pits on the edge of the platform. Feature 10 contained a miniature sand tempered zone stamped

(Alligator Bayou Stamped) vessel and a miniature Flint River Brushed jar. Feature 12 contained a complete miniature Flint River Cord Marked vessel.

Mound H at the Pharr site was a low mound with a central feature consisting of a clean rectangular fired basin. Although no artifacts or burned bone were found in the feature, it can probably also be interpreted as a crematory pit.

During the Miller I phase, particularly during the early and middle Miller I subphases, there were at least three different burial programs or types of facilities in use. Excavations at the Pharr and Bynum sites indicate that the charnel house, the burial crypt, and the platform were important components of burial programs during the Miller I phase. The two most numerous types of facilities were the charnel house and the crypt. The charnel house as defined by Brown (1979:212) consists of a structure, ". . . designed to shelter both the dead and associated mortuary processing activities. Specific space was allocated to burials and a crematory basin was located inside." Good examples of charnel houses were found at the Bynum Mounds B and D. Probable charnel houses were also found in Mounds A and D at the Pharr site. Structure patterns, however, were not found around the crematories in the Pharr mounds, perhaps because of limited investigation.

The crypt constitutes a very different type of mortuary facility. As defined by Brown:

> The Hopewell crypt is a large box constructed for storage of the dead and their grave goods and little else. At the death of an individual, the corpse was placed in this facility and accorded no further attention unless the skeletal remains were gathered later into a bundle or dumped outside (Brown 1979: 211-212).

One possible example of a crypt is found within Mound A at the Bynum site.

The third type of facility that can be identified with Miller I ceremonialism is the platform. The final ritual associated with this type of facility was to cover the platform with a mantle of earth--thus forming the conical mound. This type of facility, within Mound E at the Pharr site, functioned essentially as a charnel house. It contained a crematory on one side of the platform. Pits dug from the surface of the platform held the cremated remains.

Brown (1979:218-219) in his analysis of Middle Woodland mortuary pattern, concluded that the charnel house facility was much more common in the burial programs of Ohio Hopewell, and that the crypt was much more common in Illinois Hopewell. The platform facility, on the other hand, appears sporadically from as far north as the Serpent Mounds in Ontario (Johnston 1968), to as far south as the Crooks mound in Louisiana (Ford and Willey 1940). From this distribution, it might be argued that Miller I ceremonialism was more closely related to Ohio Hopewell than to Illinois Hopewell.

Space, Time, and External Relationships

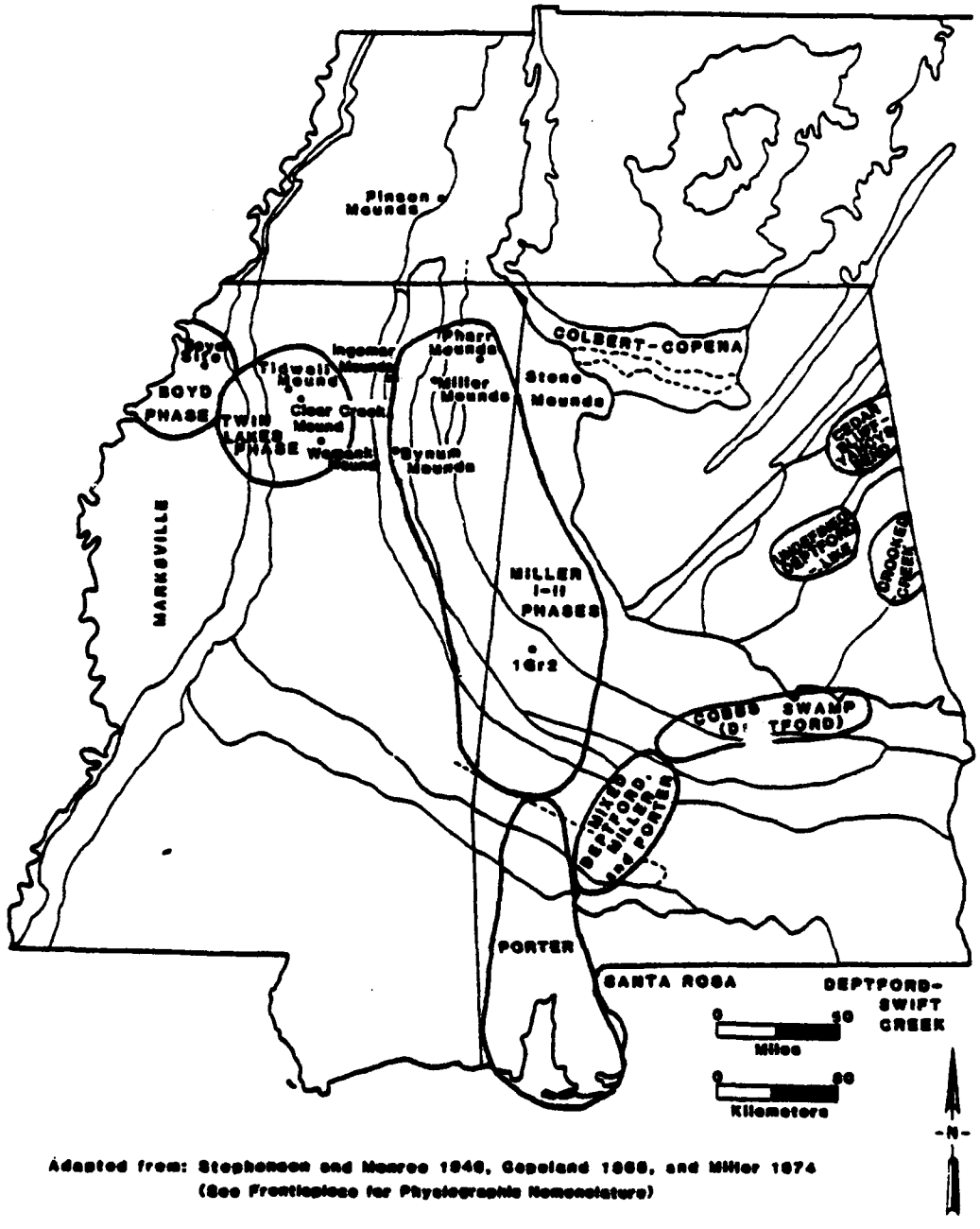
Knowledge of the spatial extent of the Miller I phase was confined to the excavations along the Natchez Trace, at Bynum (Cotter and Corbett 1951), Pharr (Bohannon 1972) and the work by Jennings (1941, 1944) prior to survey and mitigation procedures connected with the Tennessee-Tombigbee Waterway. Most southeastern archaeologists considered the Miller culture to be unique to northeastern Mississippi. William Sears, who conducted a limited survey along the lower Tombigbee between 1957 and 1969, was a major exception. Sears (1977:160-161) recognized that the Miller ceramic complex extended at least as far south as the Breckenridge Landing mounds (Moore 1901) located about 25 miles south of Demopolis, Alabama on the Tombigbee River. Recent archaeological research along the Tombigbee River in conjunction with the Tennessee-Tombigbee Waterway indicates that Miller I base camps extend as far south as Horse Creek, 40 miles south of Demopolis (Brose et al. 1982, Jenkins 1982). The northern boundary of the Miller I phase seems to be the headwaters of the Tombigbee River. The Pharr mounds are the northernmost excavated site. The western boundary appears to be near headwater tributary creeks.

The geographic boundaries between Miller I and the lower Mississippi Valley Marksville variant are not well documented. Between the Tombigbee and Mississippi drainages, Miller imperceptively changes into the Twin Lakes complex. The major difference between the two complexes is the presence of clay tempering in the Twin Lakes complex. Although Phillips (1970:891) places the Twin Lakes complex within the Marksville culture, it is clearly more closely related to the Miller culture or variant. The lower levels of the Womack mound (Kohler 1966) are ceramically very closely related to Miller I. This site is located near the eastern headwaters of the Mississippi River, only 40 miles west of the Bynum site (Fig. 15). The lowest level of the Womack mound is ceramically very similar to late Miller I, but the ceramics were tempered primarily with sparse amounts of grog. This ceramic temper undoubtedly reflects the site's location within the Mississippi drainage, where grog or clay tempered ceramics had been produced since at least 500 B.C. Judging from the small amount of Marksville pottery recovered from the Womack mound (Koehler 1966, Table 2, Fig. 9), it appears that this Miller-like group had contacts with Marksville groups in the Mississippi Valley area.

The eastern extent of Miller I is not well documented except within the Warrior drainage near the Warrior-Tombigbee confluence at Demopolis where small Miller I sites are present along the Warrior (Sheldon et al. 1981). These sites may be specialized extractive or hunting camps that had their base within the Tombigbee Valley. North of Moundville, a few Miller I sites have been recognized by this author along creeks flowing out of the Fall Line Hills.

Excavations along the Tombigbee River and in adjacent regions indicate Miller groups had contacts with numerous other groups during the Miller I phase, perhaps to a greater extent than any other time during the Miller sequence. Participation in Hopewellian ceremonialism was responsible for much of this contact. Numerous nonlocal items have been found in ceremonial contexts in Miller I mounds. These nonlocal artifacts serve not only as indices for establishing contemporaneity with neighboring

Selected Middle Woodland Sites and Manifestations



Adapted from: Stephenson and Monroe 1940, Copeland 1968, and Miller 1974
(See Frontispiece for Physiographic Nomenclature)

Figure 15.

groups, but also as useful markers for relative dating within the Miller sequence.

During the earliest of the Miller subdivisions the Bynum subphase, there is little evidence of contact with other cultural groups probably because excavation of these components has been limited. The beginning of the Bynum subphase, tentatively set at 100 B.C., has yet to be verified by excavations and radiocarbon dating within the Tombigbee drainage. This beginning date for Miller I is inferred from ceramic similarities with the lower Mississippi Valley. Excavations within the lower Mississippi Valley indicate that components with a predominance of plain and fabric marked pottery date to around 100 B.C. At the stratified Boyd site in northwestern Mississippi, fabric marked and plain pottery predominated in the lowest level. This zone was dated to 220±90 B.C. and A.D. 85±100 and provided the type component for the definition of the Boyd phase. Other Boyd phase sites in northwestern Mississippi include the McClintock and Sterling sites (Connaway and McGahey 1971). Farther north along the Mississippi River, the major ceramic types of the Burkett phase are Withers Fabric Marked and Cormorant Cord Impressed. One radiocarbon date from the Burkett site dates this phase at 190±250 B.C. (Phillips 1970: 877). It seems reasonably certain, therefore, that fabric marked pottery, or the Northern tradition, spread into the Mississippi River Valley by or slightly before A.D. 1. Because the Pharr or middle Miller I subphase is dated to around A.D. 1 or slightly later, 100 B.C. should approximate the beginning date of early Miller I and the initial appearance of fabric marking.

During the middle Miller I Pharr subphase, there is ample evidence of interaction between Miller and other groups. Numerous nonlocal artifacts in the Pharr subphase components at both the Pharr and Bynum sites can be used to relatively date this subphase between A.D. 1 and A.D. 300. On the low platform in Mound E at the Pharr site, Bohannon (1972) found a Marksville Incised var. Marksville vessel (a lower Mississippi Valley type) next to the crematory basin. Local Miller ceramic types also resting either on the platform or in features dug from the surface of the platform include a miniature Baldwin Plain vessel, a partial Saltillo Fabric Marked vessel, and a complete Furrs Cord Marked vessel. Four miniature sand tempered zone-stamped vessels are local copies of Marksville Stamped var. Marksville. One of the vessels from Feature 10 (Bohannon 1972, Fig. 13d), illustrate the rare combination of the tubby pot with the tapered pedestal base. The only other example of this combination was excavated by Fowke in 1926 at the Marksville site (Toth 1975:48). Both Marksville Incised var. Marksville and Marksville Stamped var. Marksville were produced during the lower Mississippi Valley early Marksville period. Radiocarbon dates place early Marksville components in that area approximately between A.D. 1 and A.D. 200 (Toth 1979:190). Other individuals believe that Marksville may have began as early as 100 B.C. (Steven Williams, personal communication 1982).

Other nonlocal ceramics recovered from features associated with the Pharr Mound E platform surface include a miniature Flint River Cord Marked vessel, and a Flint River Brushed vessel (Bohannon 1972, Table 1). These types, along with Mulberry Creek Plain, are limestone tempered types indigenous to the northwest Alabama area. The Middle Woodland people who

manufactured these types buried their dead in stone mounds and inhabited the upland areas south of the Tennessee Valley proper. The Walling Village site, located near the mouth of the Flint River in the Tennessee Valley, is the only major Flint River Cord Marked producing site which has been found in the valley proper. Flint River Cord Marked is a relatively numerous type at the Pharr site. There was actually more Flint River Cord Marked than Furrs Cord Marked within the old humus zone beneath Pharr Mounds D and H. Within the old humus zone beneath Mound A, however, both types were absent. Within the old humus zone beneath Mound E, the amounts of these types are equal (Bohannon 1972, Tables 2, 5).

Although both the sand tempered Furrs Cord Marked and the limestone tempered Flint River Cord Marked are minority types (each never exceeding 12 percent of the total), the consistent appearance of Flint River Cord Marked indicates sustained interaction between northwest Alabama and Pharr groups. Within the northwest Alabama Bear Creek drainage, this stone mound assemblage, comprised of Flint River Cord Marked and Mulberry Creek Plain pottery, has been radiocarbon dated to A.D. 140±90 and A.D. 280±50 at the Massey Mound site (Oakley 1975:198-222). These dates agree with the relative dates provided by the presence of the early Marksville ceramics from the Pharr site. Other nonlocal items from the Pharr site include a greenstone platform pipe, copper objects, galena cubes, and a silver panpipe (Bohannon 1972:62-66). Griffin (1979:271) states that, "The greenstone platform pipe at Pharr is probably a northern import, and its style is close to what Seeman (1977) has called the Hopewellian 17 style, which on the basis of its presence in Illinois and Michigan he dates from A.D. 50 to 200." This date is consistent with the dates proposed for the Pharr subphase in this report.

Schneider (1974) examined trace elements from copper ear spools and panpipes from the Pharr site and found that they contained bromine. Traces of bromine are found in copper ore from Tennessee but have not been found in copper ore from the Great Lakes region (Jefferies 1976:25).

Numerous nonlocal artifacts are also present in the middle Miller I component at the Bynum site. In Feature 20, a Marksville Stamped var. Marksville vessel (Cotter and Corbett 1951:12, Plate 2) aids in dating this middle Miller I component to a time coeval with the early Marksville period.

Also at the Bynum site, two caches of Snyders projectile points, 17 specimens, were recovered from the floor and subpit of the charnel house under Mound B. Snyders projectile points were an important part of the mortuary complex in the Illinois Valley and their presence in Mound B at Bynum may serve to relatively date that middle Miller I component. In her discussion of lithic industries of the Illinois Valley, Anta Montet-White states:

> Snyders points are an important part of the mortuary complex. Caches containing six to eight specimens were recovered from log tombs at the Dickinson, Havana, and Franz-Green mounds, among others. A minimal date for these points can be inferred from sherds collected in the mound fill. The latter includes Early Woodland and Havana types. No fragments of Hopewell ware

are mentioned in correlation with these sites. On the other hand, broken and reworked Snyders points were found in the mound fill of the Havana Mound 6.

On the basis of this inferential evidence, tentative time limits can be set for the Snyders ovate caches. I propose to assign them to the later part of the Havana-Early Hopewell phase. Impaired by the lack of direct ceramic association, the proposed dating retains a certain degree of uncertainty. It should be noted, however, that the period extending from the second century B.C. to about A.D. 50 corresponds to the largest occurrence of Snyders points in the village sites. The latter argument brings strong support to the suggested dating (Montet-White 1968:175).

The 200 B.C. to A.D. 50 date proposed by Montet-White for Snyders projectile points in the Illinois Valley overlaps with A.D. 1 to A.D. 200 relative date proposed for the Marksville pottery at Bynum, supporting a A.D. 1 to A.D. 200 dating of the middle Miller I Pharr subphase.

Other nonlocal items at the Bynum site are less useful for establishing relative dates for the Miller I component. Artifacts such as the 29 greenstone celts, copper ear spools, and galena nodules indicate panregional contacts, but they are not regionally diagnostic without trace element analysis nor are they temporally very distinct.

Evidence for interregional interaction during the late Miller I Craigs Landing subphase is limited, primarily because no burial mounds dating to this time have been excavated. The only evidence of interregional interaction during this subphase is from Site 1Gr2 in the Gainesville Lake area where several Marksville Stamped var. Manny sherds were found in stratigraphic association with the late Miller I component (Jenkins 1975a, Table 19, Plate 2, I-L). This is a lower Mississippi Valley ceramic variety of the middle to late Marksville period and is dated from A.D. 200 to A.D. 400 (Phillips 1970:123-124, Toth 1979:190-191). By relative dating with the lower Mississippi Valley, the late Miller I Craigs Landing subphase should date between A.D. 200 and A.D. 400.

Other evidence for dating the middle to late Miller I subphase comes from the excavations at the Cofferdam site (Blakeman et al. 1976:68). At that site Feature Y was radiocarbon dated at A.D. 125±190. Ceramics from this feature included 32 percent Saltillo Fabric Marked, 17 percent Furrs Cord Marked, 47 percent Baldwin Plain, and 2.9 percent sand tempered Mound Field Net Impressed. A complex of this composition should be intermediate between middle and late Miller I and should date around A.D. 200, well within the 1 sigma range of the date. It is estimated that the late Miller I Craigs Landing subphase dates from A.D. 200 to A.D. 300.

North of the Tombigbee drainage, the Miller I phase has close affinities with the Pinson complex. The central and largest site of this complex is the Pinson Mounds site, situated in the West Tennessee Plains physiographic district approximately 50 miles north of the headwaters of the Tombigbee drainage. The site is located on the Forked Deer River in the eastern reaches of the Mississippi drainage, and only 10 to 15 miles west of the Tennessee-Mississippi drainage divide (Fig. 15).

The Pinson Mounds site consists of over 30 mounds and associated village areas. The Smithsonian Institution surveyed and mapped the site in 1922 (Myer 1922, Fig. 2). A line of earthworks surrounding a portion of the mound group and Mound 9, the second highest mound in North America, was among the most notable features recorded at this site. Limited survey and testing have established that most of the earthworks were constructed during the Middle Woodland period (Fischer and McNutt 1962, Morse and Polhemus n.d.b., Mainfort 1980, Mainfort et al. 1982). Limited excavations in the summit of Mound 9, Sauls Mound, indicate that it too was probably constructed during the Middle Woodland period (Bob Mainfort, Jr., personal communication 1981). All available evidence indicates the Pinson Mounds site was a major Hopewellian center. This site is one of the major Hopewellian centers south of the major centers in Illinois and Ohio.

Pinson ceramics have been classified using types of both the Mississippi Valley Marksville Twin Lakes complex (Morse and Polhemus n.d.b) and the Tombigbee drainage Miller I and II complexes (Fisher and McNutt 1962). Broster (1975) and Broster and Schneider (1975) used both Miller and Twin Lakes types to classify the ceramics from the Pinson site. An examination of Pinson ceramics by this author during the summer of 1981 indicated they are virtually identical to Miller I and II ceramics. A minor difference is that there is a small amount of grog tempered pottery (about 10 percent) early in the Pinson sequence as at the Womack site. Most of this grog tempered pottery is very sandy with only sparse amounts of grog mixed in the paste. The probable reason for the early grog tempering is that this complex is located in the Mississippi drainage where grog or clay tempering occurs early and has a long history. The early Pinson ceramic complex, however, is predominantly sand tempered. Recent excavations at the Pinson Mounds site demonstrate that the ceramic sequence is very similar to the Miller sequence. Fabric marking is gradually replaced by cord marking and sand temper is replaced by grog temper. The major difference from the Miller sequence is that grog temper appears earlier and the replacement of sand temper by grog temper also begins earlier in the Pinson sequence. These trends in ceramic change at Pinson are best reflected in the excavation levels of Mound 12 at Pinson. As stated by Mainfort:

> In the lowest level (Stratum VI), Saltillo Fabric Impressed is by far the dominant type present (73%). Furrs Cordmarked (9%), Baldwin Plain (6%), and Withers Fabric Marked (8%) are minority types, as is, surprisingly, Tishomingo Cordmarked (2%). It will be recalled that this was an undisturbed sealed component beneath the mound.
>
> Although a mixed deposit, Stratum V also represents pre-mound occupation. The lowest level (Level 2) yielded a ceramic collection with a lower frequency of Saltillo Fabric Impressed (50%) than Stratum VI, while Furrs Cordmarked (15%), Baldwin Plain (9%), Tishomingo Cordmarked (6%), Tishomingo Plain (1%), and Withers Fabric Marked (12%) increase. In Level I of Stratum V, the percentage of Furrs Cordmarked (36%) increased markedly, while Saltillo Fabric Impressed (20%) is much less common. Other types showing increases are Baldwin Plain (16%), Tishomingo Cordmarked (13%), and Tishomino Plain (5%), while Withers Fabric Impressed (2%) decreases (Mainfort 1980:43).

A recent radiocarbon determination from Stratum VI, the lowest level of Mound 12, yielded a date of approximately 200 B.C. (Bob Mainfort, personal communication 1981).

Not only are Pinson ceramics very similar to ceramics of the Miller region, but there are also definite similarities to at least some Miller I burial programs--especially those at the Pharr site. At the Pinson site, a series of platforms containing crematories were found within Mound 12, the most thoroughly excavated mound of the complex (Mainfort 1980:22-24). The platforms and crematories are very similar to the central platform and crematory within Pharr Mound E. Although there are specific similarities between Miller I and the Pinson complex, none of the known Miller I sites are as large or as complex as the Pinson Mounds site.

The appearance of Miller I within the Tombigbee drainage may have resulted from the southward spread of the Pinson complex. This position is supported by the close morphological similarities between Miller I and Pinson ceramics, the close parallel in ceramic change from fabric marking to cord marking, and the specific similarities in burial programs discussed above, as well as the close geographic proximity. The northernmost Mississippi Womack complex (Koehler 1966), the Boyd phase (Connaway and McGahey 1971), and the lower Mississippi Valley and northwest Mississippi Twin Lakes phase (Phillips 1970:891) may also have resulted from this same southward spread of the Pinson complex. Together, these complexes are here referred to as the Miller variant (Fig. 11). The avenue of diffusion for the traits forming these phases is a hilly region that extends from west central Tennessee southward to south central Mississippi. The Pinson Mounds site is situated on the edge of the West Tennessee Plain physiographic district in west central Tennessee. This district extends southward into Mississippi where it is continuous with the Mississippi North Central Hills physiographic district. The Womack site is within this district (Fig. 15). The North Central Hills are drained to the west by the Coldwater, Tallahatchie, Yalobusha, Yocona and Big Black Rivers, all of which eventually drain into the Mississippi River. These rivers, flowing out of the North Central Hills, may have been the routes by which fabric and cord marking reached the Mississippi Valley floodplain. Ford (1952), in his discussion of Withers Fabric Marked, states:

> Withers is closely related to a group of similar types that form an important element of the early ceramics in the central part of the East. It seems quite certain that the type was diffused into this portion of the Mississippi alluvial valley region from the northeast rather than directly down the valley. The principal surge seems to have come from northeastern Mississippi, where Jennings has recorded a frequency of 66 percent for the directly comparable Saltillo Fabric Marked from Site MLe53. The valleys of the Tallahatchie and Coldwater rivers may very well have been the principal route by which this influence entered the flood plain, for they lead from this Mississippi hill country directly into the Sunflower and Memphis areas where it was most pronounced. The Withers in the flood plain near the mouth of these rivers is heavily sand-tempered, like Saltillo Fabric Marked, but in other parts of the alluvial valley clay-tempering is found. It is interesting to note that the later

paddle stamped wares (cordmarked) found in this part of the Mississippi Valley appear to have come from the same direction and to have followed the same route (Ford 1952:362-363).

Phillips, Ford, and Griffin (1951:73-75) and Phillips (1970:891) also agree that cord and fabric marked pottery appear to have reached the Mississippi Valley floodplain from the northeast.

The eastern side of the North Central Hills is drained by the Tombigbee River. Cord and fabric marked pottery, mound building, and possibly other traits perhaps moved into the Tombigbee drainage from the North Central Hills to form the Miller I complex. It is difficult to determine if Miller I resulted from the movement of people or concepts. Research in the Tombigbee drainage area has not yet defined a transition from the preceeding Alexander culture or variant to Miller I. The Alexander population may therefore have been displaced or quickly assimilated by a larger and intrusive population.

Another site which may prove important to understanding the origins of Miller I and its relationship to the Pinson complex is the Ingomar Mounds site in north central Mississippi located in a physiographic setting similar to that of the Pinson Mounds group. The Ingomar Mounds site is situated on the eastern edge of the North Central Hills on the drainage divide between the Mississippi and Tombigbee Rivers (Fig. 15). Physically the site is almost identical to the Pinson Mounds site. Although much of the site has been destroyed, it orginally consisted of 13 mounds within a 70 acre village, most of which was enclosed by an earthen wall. All that remains now is the central pyramidal mound, which is very much like Sauls Mound, the largest mound at the Pinson Mound site (Brown 1926:15, McGahey 1971:10).

Data provided by Sam Brookes of the Mississippi Department of Archives and History indicates that the Ingomar Mounds probably date to the Middle Woodland period. Brookes stated that surface collections from the site consist almost exclusively of Middle Woodland Miller ceramics. No shell tempered pottery was recovered. The only late ceramics present are a few historic Chickasaw and possibly some Choctaw ceramics (Sam Brookes, written communication 1982). Based on these data, Brookes concurred that the Ingomar Mounds site probably represents an important early Miller or Miller related ceremonial center. Excavation of this site could answer a number of questions such as: (1) What cultural relationships were maintained among Miller I-II, Pinson, Boyd, and Twin Lakes groups? (2) How and why was the Miller variant so intensively adapted to the North Central Hills environment? (3) What was the mechanism of cultural influence southward within the North Central Hills district? Was it site unit or trait unit intrusion? (4) Why was the Ingomar Mound site, like the Pinson site, located on the drainage divide? Was it an important political center geographically situated to control trade among groups in the Mississippi drainage on the west and the Tombigbee drainage on the east? (5) What was the relationship of this center to Illinois and Ohio Hopewell?

Other major Miller sites are located in the North Central Hills district as it extends eastward and southward into Alabama, where it is

known as the Southern Red Hills. Within the Southern Red Hills and adjacent Interior Flatwoods are at least three major mound complexes and several other smaller mound groups. Groups of 40 or 50 mounds or more are located at Rembert Landing, Breckenridge Landing, and Bickleys Landing (Fig. 15, Moore 1901:511, 1905b:272-278; Jenkins 1979:179-180).

East of the Tombigbee River, where the Interior Flatwoods and Southern Red Hills cross the Alabama River there is a concentration of Miller components collectively referred to as the Claiborne complex (Figs. 15 and 16, Sheldon, personal communication 1980). One peculiarity of the Late Woodland Miller ceramic material in the Southern Red Hills of the lower Tombigbee and lower Alabama River Valleys is that temper does not change to grog as it does within the central Tombigbee River Valley. Sand temper continues to dominate in the ceramic inventories. This Late Woodland complex in the lower Tombigbee River Valley is referred to as the Tuckabum complex (Fig. 16, Jenkins 1982).

Miller II Phase

Content

Ceramics

Ceramically, the Miller II phase is a direct development out of the late Miller I Craigs Landing subphase. The Miller II phase is marked by the numerical decline of Saltillo Fabric Marked in favor of Furrs Cord Marked. By this time, Baldwin Plain and Furrs Cord Marked were major types. By the end of the phase, grog tempered pottery was more numerous and most of the pottery was plain.

The Miller II phase is divided into early and late subphases. Components have not yet been excavated which would provide the data to document the transition (i.e., middle Miller II) from the early to late Miller II subphases. The Miller II phase, or at least the earlier part of it, is one of the least understood segments of the Miller sequence.

The best excavated example of an early Miller II Tupelo subphase component is the Miller Mound site, MLe62 (Jennings 1941). The ceramic counts from this site indicate that Furrs Cord Marked comprised 50 percent, Saltillo Fabric Marked comprised 11 percent, and Baldwin Plain comprised 39 percent of the total sand tempered ceramics. It is not known how much grog tempered pottery was associated with this complex because the only ceramic counts reported are by site, rather than closed units (Jennings 1941, Table 4). A small limestone tempered complex at this site was composed of Mulberry Creek Plain and Flint River Cord Marked. Because ceramic counts are only given by site, the exact provenience and association of these types cannot be determined. Although they were classified by Jennings (1941:198, Table 4) as Wilson Plain, 19 bone tempered plain sherds may also be associated with the Miller II component.

Three components in the Gainesville Lake area at Sites 1Gr1X1, 1Gr2, and 1Pi61 provide the data for the definition of the late Miller II Turkey

AD-A128 471 ARCHAEOLOGICAL INVESTIGATIONS IN THE GAINESVILLE LAKE AREA OF THE TENNESS..(U) ALABAMA UNIV UNIVERSITY OFFICE OF ARCHAEOLOGICAL RESEARCH N J JENKINS ET AL. SEP 82 2/3

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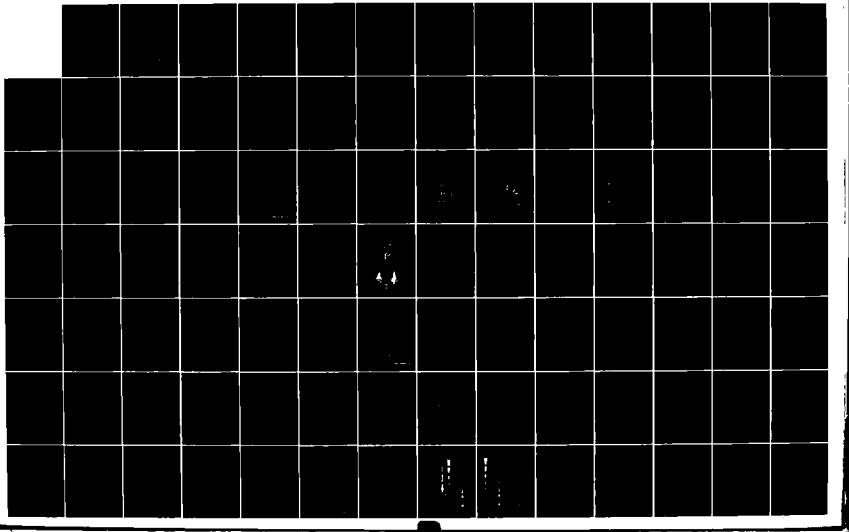
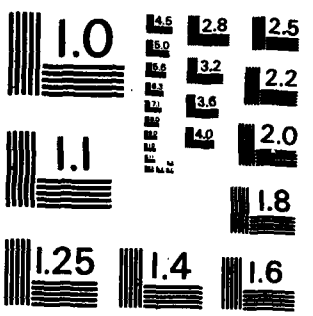
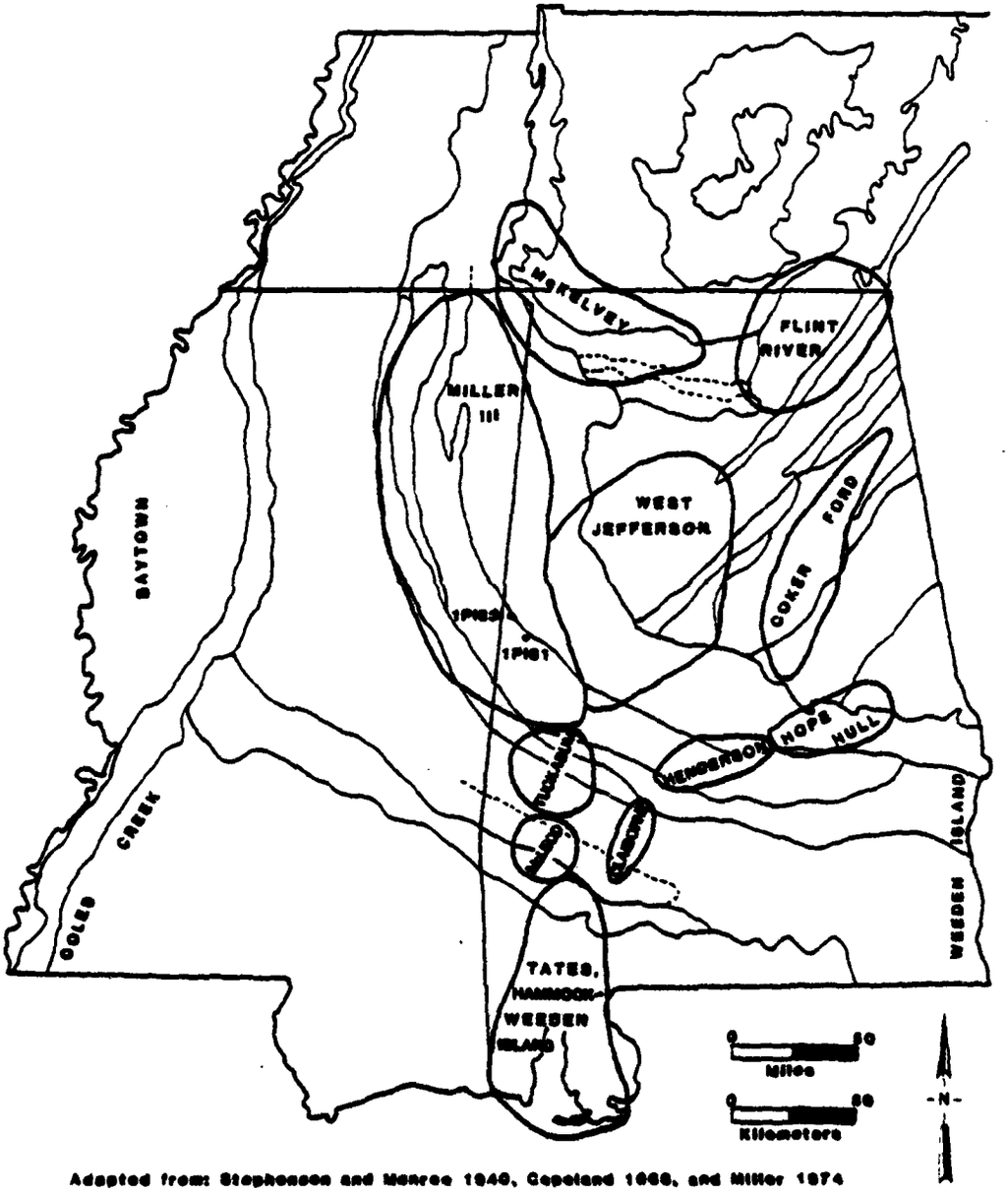




Selected Late Woodland Sites and Manifestations



Adapted from: Stephenson and Monroe 1940, Copeland 1968, and Miller 1974
(See Frontispiece for Physiographic Nomenclature)

Figure 16.

Paw subphase. One of the most dramatic changes of the Miller continuum appears in the Turkey Paw ceramic complex at this time. Characteristics common to the succeeding Late Woodland ceramics appear as consistent minorities. Grog tempered ware became a consistent part of the ceramic inventory and plain pottery became the dominant surface treatment.

During the Turkey Paw subphase, sand tempered ware was dominant although it decreased in frequency through time as grog tempered pottery increased. Baldwin Plain var. Blubber was the dominant type with a frequency of 20 to 60 percent in most features. The average frequency was approximately 30 to 40 percent (Appendix 1, Fig. 1). The dominant vessel form was a large straight sided flat bottomed beaker vessel that occasionally exhibited large crude loop handles riveted to the vessel wall.

The next most numerous sand tempered variety during the Turkey Paw subphase was Saltillo Fabric Marked var. China Bluff. This variety may range from about 5 to 40 percent of the total complex. The average range is from about 10 to 15 percent of the total Turkey Paw ceramic complex (Appendix 1, Fig. 1). This variety, like Withers Fabric Marked vars. River Bend and Montgomery, has a surface treatment randomly applied with a narrow single dowel. This treatment is a good marker for Turkey Paw components because its occurrence before and after this subphase is sporadic. The most common vessel shape of this variety is the small beaker, which may occasionally have small podal supports.

The next most numerous sand tempered variety is Furrs Cord Marked var. Pickens. This variety occurs sporadically from 0 percent to rarely as much as 60 percent in the earliest part of this subphase. The average range, however, is from about 2 to 6 percent (Appendix 1, Fig. 1). The vessel shape of this variety for this subphase is not certain.

Two ceramic types diagnostic of the sand tempered McLeod complex appear during the Turkey Paw subphase. The McLeod complex was centered along the lower Tombigbee River and consisted primarily of McLeod Simple Stamped and McLeod Check Stamped (Wimberly 1960). The most numerous of these two types in the Turkey Paw subphase is McLeod Simple Stamped var. Eutaw. The frequency range of this variety is from about 2 to 40 percent. The average frequency is, however, between 5 and 10 percent (Appendix 1, Fig. 1). McLeod Check Stamped was originally segregated into two varieties based on check shape (Jenkins 1981). More recent research has revealed that check shape probably is not a significant chronological marker. It is therefore recommended that both varieties now be combined under one variety designation, var. Bigbee. During the Turkey Paw subphase, McLeod Check Stamped has an average freqency range of about 3 to 6 percent, although some features may contain as much as 30 percent or as little as 1 percent (Appendix 1, Fig. 1). The predominant vessel shape of both McLeod Check Stamped and McLeod Simple Stamped is a beaker that exhibits a flat base and straight, slightly outslanting sides.

Other minority ceramics in both the lower Tombigbee McLeod and central Tombigbee Turkey Paw complexes include Weeden Island Red Filmed, Late Swift Creek Complicated Stamped, Carrabelle Punctated and Incised, McLeod Linear Check Stamped and possibly Basin Bayou Incised. These types together comprise less than 2 percent of the total Turkey Paw ceramic complex.

Grog temper is the next most numerous ware group within the Turkey Paw subphase ceramic complex. Grog tempered ware comprises approximately 5 percent of this complex at its beginning and increases in frequency through time. By the end of this subphase, grog temper appears at almost the same frequency as sand temper. There were a few features within this pronounced period of transition that contained more grog tempered (mostly plain) than sand tempered pottery (Appendix 1, Fig. 1).

Baytown Plain was the dominant grog tempered pottery type during the Turkey Paw subphase. Baytown Plain var. Tishomingo, which contains less grog and more sand, appears at a slightly higher frequency. During the earlier part of this subphase, var. Tishomingo appears at a rate of about 1 to 5 percent of the total complex. By the end of the subphase, this type comprises as much as 40 percent of some feature contexts. The frequency range of the dense grog tempered var. Roper parallels that of the sparsely grog tempered var. Tishomingo although var. Tishomingo is slightly but consistently more numerous. The dominant vessel form of both varieties is the beaker with heavy flat slab bases and straight outslanting vessel walls. Large, crude loop handles appear occasionally, and are riveted to the vessel wall. These loop handles are identical to the handles that appear on the sand tempered Baldwin Plain var. Blubber beaker forms of this subphase. The grog tempered handles, however, tend to be slightly smaller.

During the Turkey Paw subphase, cord marking appears on a grog tempered paste. Like the sand tempered Furrs Cord Marked of this period, Mulberry Creek Cord Marked is rare, and appears to be a grog tempered copy of Furrs Cord Marked. Mulberry Creek Cord Marked var. Aliceville (dense grog paste) and Mulberry Creek Cord Marked var. Tishomingo (sparse grog paste) appear sporadically at approximately equal frequencies throughout this subphase, with var. Aliceville occurring at a slightly higher rate. Throughout the Turkey Paw subphase, var. Tishomingo and var. Aliceville each appear at rates between 1 and 5 percent when present. The var. Aliceville, however, occurs with slightly greater consistency (Appendix 1, Fig. 1). The major vessel shapes of both these varieties were variations of large conoidal jars and hemispherical bowls.

Fabric marking is the third most frequent surface treatment during the Turkey Paw subphase. The morphological variability found in the surface treatments of Saltillo Fabric Marked appear for the first time copied on a grog tempered paste during the Turkey Paw subphase. Four varieties of the grog tempered Withers Fabric Marked were defined from surface treatment and temper variations. Vars. Craigs Landing and Montgomery are tempered with only sparse amounts of grog. The surface treatment of var. Craigs Landing was accomplished with several wide dowels woven closely together and evenly spaced. The surface treatment of var. Montgomery was accomplished with a narrow single dowel randomly applied to the vessel surface. Var. Gainesville is tempered with dense amounts of grog and has a surface finish accomplished with wide dowels woven together and evenly spaced. Var. River Bend has a surface finish like that of var. Montgomery and is also tempered with dense amounts of grog. The two most numerous grog tempered varieties during the Turkey Paw subphase are var. River Bend and var. Montgomery. These are both narrow dowel surface treatments randomly applied to the vessel surface. These appear as grog

tempered copies of Saltillo Fabric Marked var. China Bluff. These two varieties appear within a frequency range of 1 to 6 percent, and tend to be the most numerous in the later part of the subphase (Appendix 1, Fig. 1). The major vessel shape of these two varieties is the beaker, which occasionally has podal supports. Var. Gainesville is the more numerous of the wide woven dowel treatment varieties. Var. Craigs Landing occurs rarely. Var. Gainesville occurs sporadically during the Turkey Paw subphase at rates between 1 and 5 percent. This variety replaces the grog tempered and sand tempered narrow dowel varieties during the succeeding early Miller III Vienna subphase, when it becomes a consistent minority. The vessel shape of var. Gainesville is the large hemispherical bowl.

Other grog tempered varieties that appear as extreme minorities during the Turkey Paw subphase include Wheeler Check Stamped var. Sipsey, Yates Net Impressed var. Yates, Gainesville Complicated Stamped var. Gainesville, and Marksville Incised var. Yokena. Together these varieties comprise around 2 percent of the Turkey Paw ceramic complex.

The third ware group that appears during the Turkey Paw subphase is limestone tempered. Mulberry Creek Plain var. Dead River is the most numerous variety of this group. It appears to be slightly more numerous during the earlier part of this subphase when it appears at a frequency of 20 to 40 percent. Toward the end of the subphase, it is less numerous and comprises between 5 and 20 percent of the total ceramic complex. Wright Check Stamped is the second most numerous limestone tempered type within in the Turkey Paw complex. Together var. Wheeler Bend and var. Dead River have a fairly consistent rate of occurrence, between 2 and 10 percent throughout this subphase. The least frequent limestone tempered type is Pickwick Complicated Stamped. Together var. Coal Fire and var. Hogeye appear sporadically at frequencies between 1 and 10 percent (Appendix 1, Fig. 1). Together these three types comprise the late Middle Woodland Copena complex in the western Tennessee Valley (Walthall 1973, 1979).

The fourth ware group that appears as a part of the Turkey Paw complex is bone tempered. This ware comprises approximately 5 to 7 percent of the Turkey Paw complex. The two major varieties of this ware are Turkey Paw Plain var. Turkey Paw and Turkey Paw Fabric Marked var. Turkey Paw. These varieties each comprise approximately 2 percent of the total complex. Other varieties, such as Turkey Paw Fabric Marked var. Gordo, Turkey Paw Cord Marked var. Moon Lake, and Turkey Paw Punctated var. Turkey Paw appear sporadically and together comprise less than 2 percent of the total ceramic complex.

Lithics

Very little is known about the Miller I to Miller II transition in lithic technology. Few early Miller II Tupelo subphase components have been excavated and none have received an adequate lithic analysis. Numerous lithic items were recovered at the upper Tombigbee River Valley Miller site (Jennings 1941). The description of these materials is, however, general and of little comparative value. Early Miller II lithics may have been present at Sites 1Gr1 and 1Gr5 (Nielsen and Moorehead 1972). The collections from these sites, however, were small and primarily from midden mixed with other components.

Three components in the Gainesville Lake area were excavated that produced substantial late Miller II Turkey Paw subphase components with lithic material in good contexts. The major projectile point type manufactured during this subphase was Tombigbee Stemmed. Generally, this type is defined by its straight to contracting haft element and tapered shoulders. Two varieties of this type were defined from discrete morphological characteristics. Tombigbee Stemmed var. Tombigbee projectile points have straight edges, tapered shoulders, and parallel to contracting haft elements. Var. Turkey Paw projectile points are identified by their excurvate to straight blade edges, tapered shoulders, and excurvate to straight basal edges (Ensor 1981a).

Turkey Paw subphase projectile points were manufactured from large flakes drawn from locally available heated cobbles. Bipolar flaking has almost completely disappeared by this time. Cobble cores that exhibit opposed edge crushing and sheared force cones characteristic of bipolar flaking are rare in late Miller II contexts. Over 95 percent of the debitage from Turkey Paw components was heated. Heat was applied to cobbles prior to flaking, although thermal spalls were common. Thermal alteration experiments indicate that these late Miller II people probably heated their raw lithic material at temperatures ranging from 300°C to 400°C. Cobbles did not frequently shatter, but turned a dull pinkish red. These cobbles were then reduced by hand to form the large cobble preforms, blanks, projectile points and numerous cores frequently found at late Miller II sites (Ensor 1980:83-90, 1981a). The major flaked tool groups produced by late Miller II peoples include utilized flakes and heat spalls, unifacially flaked perforators as well as unifacial and bifacial edge trimmed cobbles.

Subsistence

Very little subsistence data has been recovered for the early Miller II Tupelo subphase. When sites with good components of this subphase were excavated (Jennings 1941, Nielsen and Moorehead 1972) the subsistence remains, especially plant foods, were either not recovered or were not recovered from primary contexts. One feature from Site 1Gr2 possibly dates to the Tupelo subphase. At that site, the plant remains in Feature 42 were dominated by hickory nuts. Acorns and walnuts were present in much smaller quantities (Caddell 1981a, Table 12).

The three Late Miller II Turkey Paw subphase components from the Gainesville Lake area produced abundant floral remains in primary contexts. These materials provide a good understanding of the plants used in Turkey Paw subphase subsistence. At Sites 1Gr1X1, 1Gr2, and 1Pi61, hickory nut shells were present in all features and were the most abundant of the nuts identified. Acorns were the next most generally abundant nut remains. Walnuts were the least abundant of the nut remains. At Sites 1Gr1X1 and 1Gr2, the percentages of acorns differ only slightly from earlier or later components. At Site 1Pi61, however, the percentage of acorns declined from 49 percent in late Miller II contexts to 11 percent of all nut remains in late Miller III contexts. Although walnut shells were the least numerous of the nut remains, walnuts were more intensively used during late Miller II times. Walnuts were present in 59 percent of

the late Miller II features analyzed and only 16 percent of those from late Miller III contexts. Walnuts also formed a higher percentage of the recovered nut remains from Site 1Pi61 (26.24 percent) than from Site 1Gr1X1 (1.45 percent) or Site 1Gr2 (0.10 percent). The reasons for the higher percentages of both acorns and walnuts of the total nut remains at Site 1Pi61 than at Site 1Gr1X1 or Site 1Gr2 is not well understood (Caddell 1981a).

During the Turkey Paw subphase there was a substantial increase in the variety of herbaceous annual seeds over earlier periods; a trend that later became more pronounced. Although there was an increase in variety through time there was no substantial increase in percentage, suggesting that the presence of some of these seeds resulted from clearing activities around the sites. All of the seeds from the recovered plant types could have flourished in open disturbed habitats. Weed seeds, which sparingly occurred in late Miller II context, may have been a natural product of clearing activities. These include pigweed, may grass, partridge peas, poke weed, sumac, rescue, goosefoot, wood sorrel, and dove weed. It is possible that parts of these plants were gathered for consumption or other uses. Other seeds such as persimmon, grape, honey locust, palmetto, and possibly hawthorne are less easily spread by natural means and parts of these plants were probably gathered for consumption. The plant food remains from the Turkey Paw subphase components at Sites 1Gr1X1, 1Gr2, and 1Pi61 indicate that those components probably represent late spring or early summer through the early fall occupations (Caddell 1981a).

No faunal remains from the few excavated early Miller II contexts have been analyzed. Early Miller II subsistence practices will remain unknown until undisturbed components with adequate preservation can be excavated.

Excavations within the Gainesville Lake area have provided substantial information on late Miller II Turkey Paw subphase faunal procurement strategies. Deer provided relatively less of the total meat intake than during the Miller I phase. The amount of deer had dropped to 89.0 percent by bone weight, but other mammals remained constant at 1.1 percent. Partially because of the larger faunal sample recovered, a greater variety of faunal remains characterize the Turkey Paw faunal assemblage. Turtle comprised 6.2 percent, and fish comprised 1.4 percent at the expense of deer (Woodrick 1981, Table 37). Next to deer, the most important Turkey Paw subphase mammals were turkey (4.4 percent), rabbit (2.2 percent), squirrel (1.7 percent), and raccoon (2.9 percent). Other animals that appear at frequencies of less than 1 percent include opossum, beaver, domestic dog, gray fox, black bear, striped skunk and cougar (Woodrick 1981, Table 38).

The relative density of bone recovered from the three Turkey Paw subphase components was fairly consistent. At Site 1Gr1X1, the computed density of bone was 35.2 g per cu ft, at Site 1Gr2 it was 39.8 g per cu ft and at Site 1Pi61 it was 37.8 g per cu ft (Fig. 17).

The mussel shell density for the three sites together averaged approximately 105 g per cu ft (Fig. 17). There was significant diversity, however, among the three components. At Site 1Gr1X1, the shellfish was

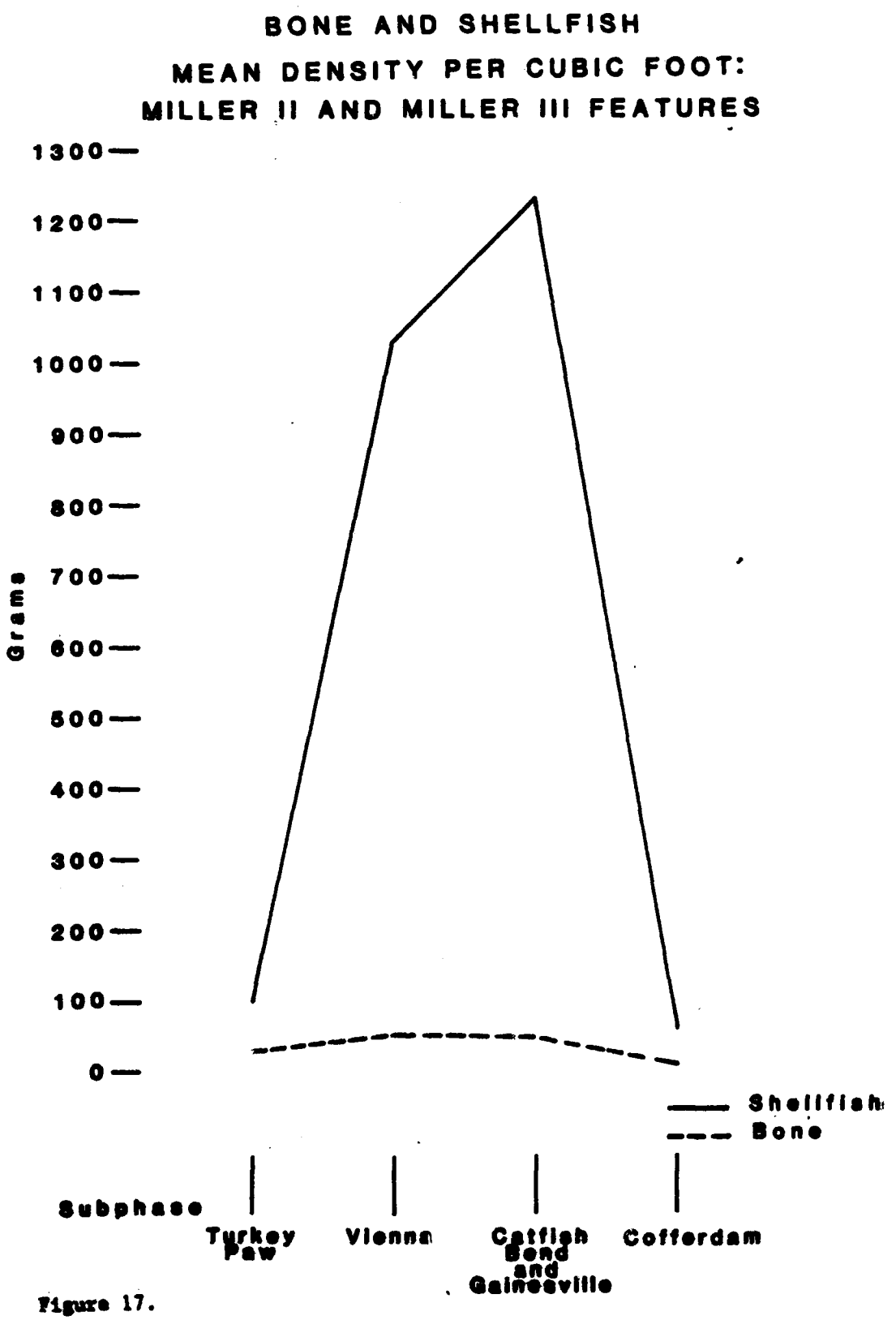

BONE AND SHELLFISH
MEAN DENSITY PER CUBIC FOOT:
MILLER II AND MILLER III FEATURES
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
Grams
Shellfish
Bone
Subphase
Turkey Paw
Vienna
Catfish Bend and Gainesville
Cofferdam

Figure 17.

85.4 g per cu ft, at Site 1Gr2 it was 136 g per cu ft, and at Site 1Pi61 it was 250 g per cu ft. The dominant shellfish species at all three Turkey Paw subphase components were Tusconia ebena and Quadrula pustulosa.

Second line subsistence resources--those foodstuffs that require significantly more energy to procure and process such as acorns, walnuts, and shellfish, and that frequently yield a lower caloric value compared to first line resources such as deer and hickory nuts were more numerous at Site 1Pi61 than at Sites 1Gr1X1 and 1Gr2. These components were approximately the same size and floral analysis suggests these sites were occupied during the same part of the year. The above normal presence of second line resources at Site 1Pi61 may indicate that this particular group was experiencing population pressures earlier than at Sites 1Gr1X1 and 1Gr2 located 15 to 20 miles south. Alternatively, Site 1Pi61 may have produced larger percentages of second line resources because it was occupied later than the other two components. Late Miller II subsistence was characterized by a greater dependence on second line faunal remains through time. This does not seem to be the case at Site 1Pi61. Ceramic evidence indicates that Site 1Pi61 was probably the earliest of the Turkey Paw components. There is more sand tempered pottery in the late Miller II component at Site 1Pi61 and the radiocarbon date of A.D. 420±170 was earlier than the other components.

House Forms

Data on house forms during the early Miller II Tupelo subphase was obtained by Jennings (1941) during excavations at the upper Tombigbee Valley Miller site where four house post patterns were found. Two of these post patterns were circular and two were oval. The circular structures were about 6 m (20 ft) in diameter and the oval examples were 4.6 by 5.5 m (15 by 18 ft). No floors or definite firepits were observed. However, a shallow basin containing some ash was recorded off-center in one structure partially beneath Mound B. No burned timbers, thatch, or other construction materials were encountered. All houses were constructed of individually set 9 to 15 cm (0.3 to 0.5 ft) diameter posts spaced an average distance of about 36.5 cm (1.2 ft) apart (Jennings 1941:193, Fig. 3).

Examples of late Miller II Turkey Paw subphase houses were recovered at Sites 1Gr1X1 and 1Gr2. At Site 1Gr1X1, an 11 by 8.8 m (36 by 29 ft) oval structure with a centrally located earth oven 1.8 m (6 ft) in diameter and 0.6 m (2 ft) deep was excavated. An almost identical oven was located near a probable northern entrance. Four large posts averaging 4.6 cm (1.5 ft) in diameter and forming a square were placed around the centrally located earth oven. Between the two large posts on the east and the two large posts on the west side of the square, were lines of smaller post 15 cm (0.5 ft) in diameter and oriented north to south. The house was constructed of individually set posts averaging 24.4 cm (0.80 ft) in diameter. The central posts, however, were larger. Two basin shaped pits were inside the structure and two others were on the outer edge, all in a general north to south alignment. Seventeen other Turkey Paw subphase pits were just outside the structure. When the structure was first exposed, an arc of ash and burned grass was observed around its southern perimeter (Jenkins and Ensor 1981).

Settlement Patterns

Two base camps were identified within the Gainesville Lake area at Sites 1Gr1 and 1Gr5 which dated to the early Miller II Tupelo subphase (Nielsen and Moorehead 1972). Unfortunately, these sites received only limited testing. Both sites were situated on fine sandy soils and were located between 6 and 7.6 m (20 and 25 ft) above normal river level. There was an apparent increase in transitory camps in the Gainesville Lake area. Eighteen Tupelo subphase transitory camps were identified from surface collections containing Baldwin Plain and Furrs Cord Marked, types that continue well into early Miller III times. Assessments from surface collections should be approached with caution, since in reality many of the components assigned to the Tupelo subphase could also be early Miller III Vienna subphase components.

Early Miller II Tueplo subphase sites, such as the Miller site, also occur along creeks some distance from the river. The Miller site is a multiple mound site and base camp in an environment similar to the Miller I phase Pharr site.

Late Miller II Turkey Paw subphase base camps at Sites 1Gr1X1, 1Gr2, and 1Pi61 can be identified in the Gainesville Lake area, but no transitory camps were defined. Turkey Paw components are exceedingly difficult to identify from multicomponent site surface collections because most of the ceramics are plain.

In summary, it appears that the Miller II settlement system is virtually unchanged from Miller I times. The population aggregated in base camps during the summer and early fall to hunt and gather the wild food resources of the floodplain forests and river. Horticulture was not yet an important alternative. Larger groups evidently separated into smaller bands during the winter and spring in order to more efficiently exploit the wild food resources available during those months.

Ceremonialism

The inhabitants of the Tombigbee region continued to erect Hopewellian-like burial mounds during the Miller II phase. The absence of numerous trade or burial goods, however, indicates that Miller groups were no longer actively participating in the Hopewellian Interaction Sphere.

Jennings (1941) excavated two Tupelo subphase mounds at the Miller site in Tishomingo County, Mississippi (Fig. 15). Mound A at the Miller site was a conical accretional mound 4.5 m (15 ft) high. Some of the burials were multiple and an estimated total of 32 individuals was present. Two burials, both extended adults, were placed together on the mound floor near the center. The remaining burials were inclusive in the mound fill. Although both extended and flexed burials were recovered, the extended were the most numerous. Only a few grave goods were interred with these burials. One platform pipe carved from limestone and a conch shell had been placed at the head of an extended adult. Eight broken stemmed elongated projectile points or knives, an unidentified vessel fragment, a terrapin carapace, and a pair of copper ear spools were found with the other burials (Jennings 1941:190-191, 194-195).

Mound B, 182.9 m (600 ft) south of Mound A, was 4 m (13 ft) high with a basal diameter of 24 m (80 ft). The six Mound B burials were also primary inhumations. Three individuals had been buried beneath the mound in shallow pits. A Furrs Cord Marked vessel was associated with one of these. The remaining three burials were in a cluster near the center of the mound, about 1.5 m (5 ft) above the mound floor. A crushed Baldwin Plain vessel was associated with this group (Jennings 1941:190-191, 194-195). A vessel found in another submound pit was misidentified by Jennings (1941:198) as Alexander Pinched. This vessel may be a smoothed over example of Mound Field Net Marked (Jennings 1941, Plate 10C).

Moore (1901, 1905b) located and partially excavated a large number of other mound groups within the central and lower Tombigbee Valley that may also date to the Miller II phase. The few artifacts recovered from these mounds included an occasional stone celt, chert bifaces, and caches of pebbles. These mounds appear to be accretional structures. Burials were encountered throughout the mound fill without any discernable patterns (Jenkins 1979:179-180).

In summary, several major changes can be observed in the ceremonialism from Miller I to Miller II. Miller II burials and burial mounds were not as elaborately furnished or prepared as those found in Miller I contexts. Nonlocal items and exotic goods were rare in Miller II contexts. Also the treatment of the dead was simpler during Miller II. Burials were primary inhumations and cremation was not practiced. Charnel houses and crematory platforms previously used for the preparation of the dead were absent.

Space, Time, and External Relationships

Previous surveys along the upper Tombigbee River (Blakeman 1976, Hubbert 1978, Atkinson 1978) indicate that the northern range of the Miller II phase extended at least as far north as the upper Tombigbee drainage and overlapped spatially with the Miller I phase. To the south, the distribution of Miller II components again closely parallels the Miller I distribution. The southernmost Miller I base camp is near the mouth of Horse Creek. To the east, a few Miller II components have been identified within the Warrior drainage. These components were consistently small and could be the camps of task specific hunting or procurement parties emanating from base camps in the nearby Tombigbee River Valley.

The western distribution of the Miller II phase is not well documented. The Womack site (Koehler 1966), in the eastern reaches of the Mississippi drainage, provided evidence for the change from fabric marking to cord marking similar to that from Miller I to Miller II. Grog temper comprised a much higher percentage of the ceramic assemblage at this Middle Woodland site than at sites further east within the Tombigbee drainage. Grog temper appears earlier within the Mississippi drainage where clay or grog comprised the primary tempering material between approximately 500 B.C. and A.D. 900. Numerous Miller-like sites, similar to the Womack site, may be situated both east and west of the Tombigbee-Mississippi River divide. Sites such as Womack produced more grog tempered

pottery reflecting sustained contacts with the contemporaneous lower Mississippi Valley Marksville groups. Phillip's (1970:891-892) Twin Lakes phase is a comparable example of this phenomenon.

The assignment of calendrical dates to the Miller II phase can be accomplished to some degree by relative and radiocarbon dating. The early Miller II Tupelo subphase is estimated to date from A.D. 300 to A.D. 450. No radiocarbon dates have been obtained for this subphase. The beginning date is approximately the same as the end of the late Miller I Craigs Landing subphase which was dated by one radiocarbon date from the Cofferdam site (Blakeman et al. 1976) and by relative dating with lower Mississippi Valley Marksville.

The late Miller II Turkey Paw subphase can be dated by three radiocarbon assays as well as by relative dating with cultural complexes from adjacent regions. Both the radiocarbon and relative dates place the Turkey Paw subphase from about A.D. 450 to A.D. 600. The earliest date of A.D. 420±170 from the Gainesville Lake area corresponds to the temporal assignment of the ceramic content of the feature from which it was taken. This feature, Feature 15 at Site 1Pi61, was the earliest feature in the seriation (Appendix 1, Fig. 1) and contained more Furrs Cord Marked than any of the other Turkey Paw subphase features and only a small amount of grog tempered pottery. Radiocarbon determinations from slightly later features, Feature 56 from Site 1Gr2 and Feature 42 from Site 1Gr1X1, were A.D. 490±50 and A.D. 680±75, respectively. These date the later part of the Turkey Paw subphase.

The Turkey Paw subphase can also be relatively dated by the limestone tempered Copena ceramics and sand tempered early Weeden Island-early McLeod ceramics that consistently appear in direct association with the local Turkey Paw subphase ceramics in all three excavated components. A number of radiocarbon assays from three Tennessee Valley Copena mounds firmly place the Copena mound burial cult between 100 B.C. and A.D. 500. Seven samples from Site 1Ms300 date an early Copena complex from 50 B.C. to A.D. 190. Early Copena is characterized ceramically by the types Longbranch Fabric Marked and Mulberry Creek Plain within the Guntersville Basin (Cole 1981). Two other radiocarbon samples from Sites 1Ms143 and 1Mg62 yielded dates of A.D. 320 and A.D. 375, respectively, suggesting a temporal position of A.D. 200 to A.D. 500 for late Copena. Late Copena within the Pickwick Basin is characterized ceramically by the types Mulberry Creek Plain, Wright Check Stamped and Pickwick Complicated Stamped (Walthall 1972:137-148, 1979:202). These types also appear in Turkey Paw subphase contexts.

Recently a post-Copena complex has been defined by Futato (n.d.) for the Cedar Creek drainage in northwestern Alabama. This complex is defined ceramically by a predominance of Mulberry Creek Plain with Wright Check Stamped, Pickwick Complicated Stamped, Flint River Brushed, and Flint River Cord Marked occuring less frequently. Large limestone tempered loop handles virtually identical to the sand and grog tempered examples appearing in the Turkey Paw complex were also present in this complex. This post-Copena complex has been dated from A.D.500 to A.D. 700 (Futato n.d.).

Ceramic types that appear commonly in the McLeod complex (Wimberly 1960) and the early Weeden Island complex (Willey 1949) are also useful

for relative dating the Turkey Paw subphase. Weeden Island is probably most accurately characterized as a dynamic mortuary system that developed in northern Florida and subsequently spread (for unknown reasons) to several regionally distinct adjacent cultures (Milanich 1980:11-17). When Weeden Island ceremonialism appears as an overlay over local manifestations, several distinctive pottery types more common to northern Florida appear as minorities. These types include Weeden Island Red Filmed, Keith Incised, Weeden Island Incised, Weeden Island Punctated, Tucker Ridge Pinched, a polished plain type frequently with a thickened, often wedge-shaped rim, and Late Swift Creek Complicated Stamped, more characteristic of southern Georgia. Within the central and west Alabama regions, when these types appear with a local ceramic complex, they usually together comprise 1 to 3 percent of the total ceramic assemblage in a village midden. When they appear in burial mounds their percentage is markedly higher. Within the lower Tombigbee Valley, Weeden Island ceremonialism and a minority of Weeden Island ceramic types appear in association with the McLeod complex (Wimberly 1960, Moore 1901). Pure Weeden Island sites occur in the Mobile Bay-Delta and coastal regions (Walthall 1980, Jenkins 1982).

The Weeden Island types Weeden Island Red, Keith Incised, Mound Field Net Marked, Late Swift Creek Complicated Stamped, and possibly Carrabelle Incised and Punctated appear within the Gainesville Lake area during the Turkey Paw subphase and comprise less than 1 percent of the total complex. They appear in association with the lower Tombigbee McLeod types, McLeod Check Stamped (mean percentage 3.0), Early McLeod Linear Check Stamped (mean percentage 1.0) and Early McLeod Simple Stamped (mean percentage 5.38). Although the early McLeod complex has not been radiocarbon dated along the lower Tombigbee River, the early Weeden Island types that appear with early McLeod and Turkey Paw components have been dated in northern Florida. Dates for Weeden Island I-Late Swift Creek of A.D. 475 and A.D. 600 at the Gulf Breeze 3 site (Phelps 1968), A.D. 400±150 from the Weeden Island site and A.D. 530±250 from Crystal River Stela I (Bullen 1966) are consistent with the Gainesville Lake area Turkey Paw subphase dates.

Because no late Miller II burial mounds have been excavated, it is unclear what effect Weeden Island and McLeod contacts may have had on Miller II ceremonialism. The Weeden Island ceramic influence may have acted as a brief interruption of the Miller ceramic tradition, resulting in the development of the late Miller II complex. The late Miller II ceramic complex was composed primarily of types with plain surface finishes similar to the early Weeden Island complex of the Mobile Bay area. Farther east on the Alabama River, Weeden Island contact produced a dramatic effect on regional ceramic development. Between Selma and Montgomery, the Henderson complex (Dickens 1971) evolved as a result of Weeden Island influence on the local Deptford-Cobbs Swamp complex between A.D. 400 and A.D. 600. The majority of the ceramics in the earlier Henderson components also seem to be plain (Jeter 1977, Table 1, Nance and Mentzer 1980). Farther north on the upper Alabama River, Weeden Island influence resulted in the development of the Dead River complex from the Calloway complex around A.D. 500 (Chase 1966, 1967a, 1967b, 1978). Later the Hope Hull complex developed from the Dead River complex at approximately A.D. 750 (Chase 1968). The pronounced Weeden Island influence exerted on ceramic development along the Alabama River, suggests that it could have also influenced the nearby Miller ceramic development. This influence does not

seem to have been lasting, however. Early Miller III pottery is very similar to early Miller II sand tempered types but it is grog tempered.

LATE WOODLAND PERIOD
(A.D. 600 - A.D. 1100)

By A.D. 400 the transition from Middle to Late Woodland was underway in most regions of the Southeast. The population was rapidly expanding, as evidenced by more and larger middens along the river bottoms. The Hopewellian Interaction Sphere was no longer viable and ceremonialism was less complex in many areas. The major exception to decreasing ceremonialism was the Weeden Island phenomenon.

By A.D. 400 the Weeden Island complex had developed in northern Florida and Mobile Bay. By A.D. 600 Weeden Island ceramics, mound building, and ceremonialism had spread to a number of otherwise regionally distinct cultural groups in southern Alabama and Georgia, similar to the spread of Hopewellian ceremonialism from Ohio and Illinois throughout much of the eastern United States around A.D. 1. In southern Georgia, the Kolomoki complex, a combination of Weeden Island and Late Swift Creek, developed (Sears 1956, Brose 1979b). Along the upper Alabama and Tallapoosa Rivers, by A.D. 500 the sand tempered Calloway complex had developed into the Dead River complex. The Dead River complex in turn developed into the Hope Hull complex by A.D. 750 as a result of continued interaction with Weeden Island groups (Chase 1966, 1967a, 1967b, 1978).

Farther southwest, along the Alabama River, a local variant of Deptford, the Cobbs Swamp complex (Chase 1978), had developed into the Henderson complex (Dickens 1971). By approximately A.D. 400, check and simple stamping had spread down the Alabama River to the lower Tombigbee region to form the McLeod complex (Wimberly 1960). The McLeod complex also reflects contact between McLeod and Weeden Island groups to the south in the Mobile Bay area.

Within the lower Mississippi Valley, the Coles Creek complex was developing. This ceramic complex also reflects Weeden Island and McLeod influences. Within the upper portion of the lower Mississippi Valley between A.D. 400 and A.D. 700 (Phillips 1970) the Baytown complex developed out of the Issaquena complex (Phillips 1970). The exact time of this development is unclear and understanding of this sequence is marred by inconsistent radiocarbon dates. It is clear, however, that the development of local Baytown ceramic complexes were integrally related to the Tombigbee Valley development of Miller III and to a lesser degree the northwestern Alabama McKelvey series. These manifestations are together referred to as the Baytown variant (Fig. 16).

Once the Baytown, Miller III, and McKelvey complexes developed fully, their ceramic content was very similar; all three were grog tempered and the major types were Baytown Plain and Mulberry Creek Cord Marked, with regionally varying percentages of Withers Fabric Marked and Wheeler Check Stamped. Alligator Incised was a consistent minority type from the Mississippi Valley to the western Tennessee Valley. These relationships will be more fully discussed at the end of this chapter.

Miller III Phase

The Miller III phase developed from the Miller II phase. Miller III ceramics are primarily grog tempered. The small triangular projectile point was the dominant point form, possibly reflecting the introduction of the bow and arrow. Corn also appears for the first time as a consistent supplement to the wild plant food diet, but it comprised less than 1 percent of the total plant food remains. The size and number of Miller III sites increased dramatically. Shellfish use, along with a broader spectrum of other aquatic resources and vertebrate fauna, increased substantially. Numerous large Miller III sites along the central Tombigbee River consisted of dense black middens composed of numerous shellfish, vertebrate remains, grog tempered pottery, and fire cracked red chert.

The Miller III phase has been divided into four subphases, based primarily on percentages of the major ceramic types and varieties and by changes in lithics, faunal and floral remains, house forms, and burial practices. The Miller III phase was initially divided into early, middle, late, and terminal subphases, respectively labeled the Vienna, Cofferdam, Catfish Bend and Gainesville subphases (Jenkins 1980). More recent research indicates that the Cofferdam subphase was not middle Miller III but was probably fully contemporaneous with the Gainesville subphase (Jenkins 1981). The ceramic seriation in fact placed the Cofferdam complex later than the terminal Miller III Gainesville subphase (Appendix 1, Fig. 1). The contemporaneity of the Cofferdam and Gainesville complexes will be addressed in the following discussion. Because the ceramic sequence is somewhat more complex than originally described by Jenkins (1980), the terms early, middle, late, and terminal Miller III are dropped in this discussion. Subphases are designated by their subphase names.

Content

Ceramics

The Vienna subphase, the earliest manifestation of the Miller III phase, is characterized by both sand and grog tempered plain ceramics. By the end of this subphase, sand tempered pottery had become a minority ware. Early and late segments of the Vienna subphase are tentatively defined by the relative percentages of grog and sand tempered pottery. The early Vienna subphase ceramic complex is comprised of almost equal amounts of sand and grog tempered pottery with sand temper tending to predominate during the very earliest part of the subphase. The late Vienna subphase is characterized by the dominance of grog tempered pottery over percentages of sand tempered ware (Appendix 1, Fig. 1).

During the early Vienna subphase, the most numerous ceramic variety is the sand tempered Baldwin Plain var. Blubber which comprises 30 to 40 percent of the total ceramic complex. The next most numerous variety is the grog tempered Baytown Plain var. Roper which comprises approximately 20 percent of the complex during the earliest part of the early Vienna subphase and about 30 percent during the later part. Baytown Plain var. Tishomingo occurs at an average rate of about 4 percent. Plain pottery then accounts for 60 to 70 percent of the total early Vienna subphase complex.

Grog tempered Mulberry Creek Cord Marked var. Aliceville consistently comprises 12 to 15 percent of the total complex with var. Tishomingo accounting for less than 1 percent. Sand tempered Furrs Cord Marked var. Pickens is also a major variety with an average occurrence of about 10 percent.

Withers Fabric Marked var. Gainesville appears sporadically at this time at an average rate of about 2 percent. However, in the following subphases it will become a more consistent minority. Withers Fabric Marked var. River Bend, an important minority of the previous Turkey Paw subphase, has dropped to an average occurrence of less than 1 percent. Alligator Incised var. Oxbow and var. Gainesville appear for the first time in the Miller sequence. These varieties appear consistently throughout the Miller III phase at a frequency of less than 0.50 percent.

A large number of sand tempered minority varieties were present in early Vienna subphase features. Many of these varieties also occured during the Turkey Paw subphase and their occurrence in early Vienna subphase features may be accidental--a natural product of prehistoric pit digging and filling activities. It is inevitable that ceramics from earlier time periods will find their way into later features if a site is occupied for a long period of time. Accidental inclusion of earlier minority types or varieties usually occur inconsistently in later features. Some of these ceramics may be identified as earlier chance inclusions by their inconsistent occurrence. Others with a known temporal distribution in adjacent areas may be identified as trade sherds, with some speculation. Types including Weeden Island Incised var. Unspecified, Weeden Island Red Filmed var. Unspecified, Keith Incised var. Unspecified, Porter Zoned Incised var. Unspecified, and McLeod Check Stamped and Simple Stamped varieties, together comprised less than 3 percent of all early Vienna ceramics. Their presence may represent continued interaction between early Vienna groups and groups in the lower Tombigbee region.

The only excavated early Vienna subphase component within the Gainesville Lake area was at Site 1Pi61 (Jenkins and Ensor 1981). One other early Vienna subphase component was excavated at the Kellogg Village site, located just north of Columbus, Mississippi (Atkinson et al. 1980). The sand tempered minorities referred to above were absent at that site, which did not have an earlier Turkey Paw subphase component.

During the late Vienna subphase the relative percentages of cord marked to plain remain constant. Grog tempered ware, however, increases substantially over sand tempered pottery. Baytown Plain and Mulberry Creek Cord Marked increase at the expense of Baldwin Plain and Furrs Cord Marked. At this time Baytown Plain var. Roper had an average range of 45 to 55 percent of the total and the amount of var. Tishomingo has decreased to less than 2 percent. The amount of Mulberry Creek Cord Marked var. Aliceville increased from about 15 percent at the beginning of the late Vienna subphase to about 25 percent at the end of the subphase. Mulberry Creek Cord Marked var. Tishomingo averages about 1 percent. The occurrence of Withers Fabric Marked var. Gainesville doubled by this time, increasing from 2 percent in the early Vienna subphase to 4 or 5 percent in the late Vienna subphase.

A number of minority ceramics appear for the first time during the late Vienna subphase and together comprise less than 1 percent of the total complex: Yates Net Impressed var. Yates, Gainesville Simple Stamped var. Hickory, Salomon Brushed var. Fairfield, Evansville Punctated var. Tishabee, Larto Red Filmed var. Unspecified, and Avoyelles Punctated var. Unspecified. Alligator Incised vars. Oxbow and Gainesville continue at less than 0.50 percent of the total complex. For the first time, these varieties appear incised over Mulberry Creek Cord Marked var. Aliceville. Many of the same sand tempered minorities appeared in features of this subphase at Site 1Pi61 that appeared in the early Vienna subphase features. Most of these sherds are probably inclusive in the pit fills from the earlier Turkey Paw subphase component since they appear inconsistently and at a much lower frequency than during the earlier Turkey Paw subphase.

Late Vienna subphase components were excavated within the Gainesville Lake area at Sites 1Pi33 and 1Pi61 (Jenkins and Ensor 1981) and 1Pi13 (Jenkins 1975a). One other component of this subphase was excavated by O'Hear et al. (1981) at the Tibbee Creek site, just north of Columbus, Mississippi.

By the following Catfish Bend subphase, plain grog tempered pottery had decreased, grog tempered cord marked pottery had increased, and all sand tempered pottery had either disappeared or was present only in an extreme minority. Throughout the Catfish Bend subphase, the relative amounts of Baytown Plain var. Roper decreased and Mulberry Creek Cord Marked var. Aliceville increased (Appendix 1, Fig. 1). Baytown Plain var. Roper and Mulberry Creek Cord Marked var. Aliceville each comprised between 35 and 45 percent of the total ceramic complex. Baytown Plain var. Tishomingo and Mulberry Creek Cord Marked var. Tishomingo each comprised about 1 percent of the total ceramic complex. Withers Fabric Marked var. Gainesville has increased in frequency to about 5 to 10 percent of the total ceramic complex.

All of the grog tempered minority types present during the Vienna subphase continued into the Catfish Bend subphase. Several new varieties also appeared for the first time. These include Alligator Incised var. Geiger, Gainesville Cob Marked var. El Rod, and Avoyelles Punctated var. Tubbs Creek. Alligator Incised vars. Oxbow and Gainesville occasionally appear over Mulberry Creek Cord Marked var. Aliceville and Withers Fabric Marked var. Gainesville on the same vessels. Vars. Oxbow and Gainesville rarely appear around the upper vessel interior of the fabric and cord marked varieties. Together these minorities comprised less than three percent of the total complex.

There is also a total of about 6 or 7 percent sand tempered pottery in Catfish Bend subphase features. It is unclear whether this pottery represents a primary association or if these sherds found their way into these features as an accidental by-product of prehistoric pit digging and filling activities. The two major sand tempered varieties present are Baldwin Plain var. Blubber and Furrs Cord Marked var. Pickens (Appendix 1, Fig. 1).

Two Late Woodland ceramic complexes developed by the end of the Catfish Bend subphase at A.D. 1000. One of these, the Gainesville subphase

ceramic complex, may have developed out of the Catfish Bend subphase complex either as a result of contact with Mississippian groups, or development toward Mississippian *norms*. The other, the Cofferdam subphase complex, may represent a direct development out of the Catfish Bend subphase without Mississippian influence. This complex contains very few Mississippian attributes.

There are only slight ceramic differences between the Gainesville subphase and the preceeding Catfish Bend subphase; the grog tempered ceramics and their percentages are practically identical. The slight increase in Baytown Plain for the Gainesville subphase reported by Jenkins (1981) is not supported by the seriation presented in Appendix 1, Figure 1. There are, however, two important differences between these two complexes. The Gainesville subphase Baytown Plain var. Roper infrequently displays grog tempered loop handles and these may be copies of contemporaneous Mississippian counterparts. Morphologically similar grog tempered and shell tempered loop handles were found in Feature 51 at Site 1Pi33. Carbon recovered near the surface of this 1.5 m (5 ft) deep pit dated to A.D. 1030±55 and another carbon sample from the very bottom of the feature yielded the same date, A.D. 1030±55 (Jenkins 1981, Table 1).

The most distinctive ceramic difference between the Gainesville and Catfish Bend subphases is the appearance of less than 1 percent shell tempered pottery and a very small amount of mixed shell and grog tempered pottery (less than 0.50 percent) in the Gainesville subphase ceramic inventory. Distinctive nonceramic characteristics include a semiextended burial position with head oriented eastward (east, northeast, or southeast) and rectangular semisubterranean houses. These two characteristics are discussed in greater detail below under their respective headings.

The Cofferdam complex, although probably contemporaneous with the Gainesville complex, is ceramically distinct from it. The Cofferdam complex probably also developed directly from the Catfish Bend complex. Cofferdam components are generally characterized by a two or three to one dominance of Mulberry Creek Cord Marked var. Aliceville over Baytown Plain var. Roper. During the earliest part of the Cofferdam subphase, Mulberry Creek Cord Marked var. Aliceville comprised approximately 55 to 60 percent and Baytown Plain var. Roper comprised about 20 to 30 percent of the total complex. By the end of the Cofferdam subphase, Mulberry Creek Cord Marked var. Aliceville comprised approximately 65 to 75 percent and Baytown Plain var. Roper comprised less than 15 percent of the total complex. This increase in cord marking from early to late corresponds to the radiocarbon dates (Appendix 1, Fig. 1). During this time the amount of Withers Fabric Marked var. Gainesville decreased slightly to an average range of about 4 to 7 percent.

Minority ceramics present during the Cofferdam subphase include Alligator Incised vars. Oxbow and Gainesville, Yates Net Impressed var. Yates, Gainesville Simple Stamped var. Hickory, Solomon Brushed var. Fairfield, and Evansville Punctated var. Tishabee. Alligator Incised vars. Oxbow and Gainesville appear over Mulberry Creek Cordmarked var. Aliceville and Withers Fabric Marked var. Gainesville, as well as just below the rim on the interior of these vessels. These varieties also appear below the interior rim on Baytown Plain var. Roper vessels.

Mississippian attributes were present in Cofferdam components but were much rarer than in Gainesville subphase components. One or two shell tempered sherds have been found in Gainesville Lake area Cofferdam subphase Features 49, 109, and 114 at Site 1Gr2. One shell tempered sherd was found in each of Features E, U, and Z at the Cofferdam site (Blakeman et al. 1976:71, 76-77). Feature F at that site produced a section of a grog tempered plain vessel very similar to globular Mississippian jar forms (Blakeman et al. 1976, Fig. 5E). Grog tempered discoidals were found in otherwise pure Cofferdam subphase features; Features E, Z, and EE (Blakeman et al. 1976:71, 72, 77, 79, Plate 19).

Approximately 5 to 6 percent of the ceramics recovered from Cofferdam subphase features at Sites 1Gr1X1 and 1Gr2 was sand tempered. Ceramics recovered from these features included approximately 4 percent Baldwin Plain var. Blubber and 2 percent Furrs Cord Marked var. Pickens. It is not clear if this is a true association or if these varieties accidentally found their way into the Cofferdam features as a result of prehistoric pit digging.

During the Miller III phase, as earlier, there were strong correlations between certain surface finishes and specific vessel forms. Baytown Plain vars. Roper and Tishomingo were associated with flat based and slightly outslanting sided beakers. These beakers differ from the beakers of the preceeding Turkey Paw subphase in that the bases are not as heavy or slab-like and there were no loop handles attached to the Miller III phase examples except very late in the sequence. Rounded base hemispherical bowls appear less frequently than the beakers.

Mulberry Creek Cord Marked vars. Aliceville and Tishomingo appeared on large shallow hemispherical bowls and deep hemispherical or conical-like containers. No flat based cord marked vessels were encountered.

Withers Fabric Marked vars. Gainesville and Craigs Landing appeared almost exlusively on the large shallow hemispherical bowls. Only one sherd of these varieties from the entire Gainesville collection was from a vessel with a flat base. Several Miller III phase minority types also appeared on the hemispherical bowls: Alligator Incised vars. Oxbow, Gainesville, and Geiger; Avoyelles Punctated var. Tubbs Creek; Evansville Punctated var. Tishabee; Gainesville Cob Marked var. El Rod; and Gainesville Simple Stamped var. Hickory.

Lithics

Miller III lithic technology is characterized by five basic changes: (1) the appearance of the small triangular projectile or arrow point; (2) the reduced size of Miller III arrow points over Miller II projectile points; (3) the almost complete absence of cores in Miller III phase assemblages; (4) changes in the color and luster of lithic materials, most Miller III lithics were more lustrous and a deeper red; and (5) the overall reduction in flake size from Miller II to Miller III (Ensor 1980: 87).

The first appearance of the small triangular projectile or arrow point is diagnostic of the Miller III lithic complex. The practice of intensively heating the local cherts appeared concurrently with this projectile point style.

By the beginning of the early Miller III Vienna subphase a distinct change in lithic technology in regard to the use of heat treatment is apparent. Miller II peoples had heated the local yellow cherts at relatively low temperatures which altered the physical properties of the chert, thereby enhancing the flaking quality, as well as turning the yellow chert a dull or pinkish red. The lower temperatures also inhibited thermal explosion and provided the larger spalls and cobbles necessary for the production of the Miller II large stemmed projectile points. The Miller III procedure of heating at higher temperatures produced a large amount of bright red small flakes and fire cracked chert. After heating a batch of the local yellow chert cobbles, the Miller III people selected the desired thermally altered red spalls for projectile point or other tool manufacture. The remaining fire cracked chert was discarded and this unusually large volume of red fire cracked chert is characteristic of Miller III middens.

Three varieties of the small triangular projectile point were manufactured throughout the Miller III phase: Madison var. Gainesville, Hamilton var. Gainesville, and Pickens Triangular var. Pickens. The Pickens Triangular var. Pickens type predominated during the Vienna subphase. This variety, measuring over 25 mm in length, was generally the largest of the triangular varieties. These projectile points had straight bases, excurvate blade edges, and were thin and well flaked. The Madison var. Gainesville type was most frequently encountered during the following Catfish Bend and Gainesville subphases and extended into the Mississippian stage. This variety had straight blade edges and a straight base. Class I of this variety measured less than 25 mm in length. Class II exceeded 25 mm in length (Ensor 1981a). During the Cofferdam subphase the two major projectile point varieties were the Madison var. Gainesville and the Hamilton var. Gainesville, with the latter being the most numerous. The Hamilton var. Gainesville type had incurvate basal and blade edges. Class IV of this variety was less than 25 mm in length. Class V was greater than 25 mm in length (Ensor 1981a).

Modified lithics, other than projectile points, in Miller III components seem to remain virtually unchanged throughout the Miller III phase. Utilized flakes and spalls were by far the most common. Others include unidentifiable bifaces, knives, blanks, preforms, perforators and choppers. Ground stone items were relatively rare and consisted of hammerstones, abraders, pitted stones (nutting stones), anvil stones and mullers (Ensor 1981a).

Subsistence

Sites 1Gr1X1, 1Gr2, 1P133, and 1P161 contained substantial Miller III components and provided the ceramic data for the division of the Miller III phase into four subphases. The associated subsistence data revealed changes in floral procurement, and substantial changes in faunal procurement, through time.

Subsistence data from the Gainesville Lake area indicate that nuts were a major food source throughout the Miller III phase. Hickory nuts, followed by acorns, were by far the most frequently consumed nuts. The frequency of corn remains suggests that it was never a main carbohydrate source in the diet of the Miller III population. Of the 47 Miller III features analyzed, including floated samples and one-sixteenth inch mesh waterscreened samples, only 11 contained corn. In each of these, corn comprised less than 1 percent of the total floral collection. When present, the corn always consisted of a few cupules or kernels. No cobs were present. The amount of corn does seem to have increased slightly through time. For example, of the 12 early Miller III Vienna subphase features analyzed for floral remains, only one or 8 percent contained corn; of 17 Catfish Bend subphase and Gainesville subphase features analyzed, four or 23 percent contained corn. Of 18 Cofferdam subphase features analyzed, six or 33 percent contained corn (Caddell 1981a).

Large numbers of wild seeds were present in the Miller III samples from the Gainesville Lake area. There was no apparent increase, however, in the relative percentage of wild seeds in samples from Miller II to Miller III contexts. Miller III features contained a higher number and a greater variety of herbaceous annual seeds, primarily because of the larger Miller III sample; 47 Miller III features and only 27 Miller II features were analyzed. Species such as wild bean (Strophostyles sp.) beggar-lice (Desmodium sp.), blackberry or dewberry (Rubus sp.), panic grass (Panicum sp.), and maypop (Passiflora incarnata) appeared for the first time in Miller III features. Many seeds of weedy annuals such as goosefoot, pokeweed, pigweed, wood sorrel, knotweed, and chickweed may have been present only as a consequence of clearing activities. These seeds were not consistently present in large quantities, suggesting that they were probably not gathered for consumption; although some of them may have been consumed (Caddell 1981a).

Several significant trends are inferred from the Miller III faunal data. These trends begin in the Gainesville Lake area excavated sample during the late Miller II Turkey Paw subphase and may be traced to the Miller I phase. The Miller I and early Miller II faunal samples from pure contexts, however, were small. Throughout the Miller III phase, the relative amount of deer decreased, but other mammals, reptiles, and shellfish increased (Figs. 17 and 18).

The relative percentages of the vertebrate species recovered from early Miller III Vienna subphase contexts remained relatively unchanged from the late Miller II Turkey Paw subphase. During the Vienna subphase, deer had decreased by only one percent, to 88 percent of the total vertebrate remains by bone weight (Fig. 18). Other mammals increased only slightly to 2.6 percent. Turtle, bird and fish remained relatively constant at 6.6 percent, 1.8 percent, and 0.9 percent, respectively (Woodrick 1981, Table 37). Small mammals that were an important part of the Vienna subphase faunal inventory included rabbit (7.3 percent), opossum (5.1 percent), turkey (4.1 percent), gray fox (1.8 percent), raccoon (1.7 percent), beaver (1.4 percent), and squirrel (1.2 percent). Cougar, black bear, striped skunk, and the common mole comprised less than 1 percent of the faunal inventory (Woodrick 1981, Table 38).

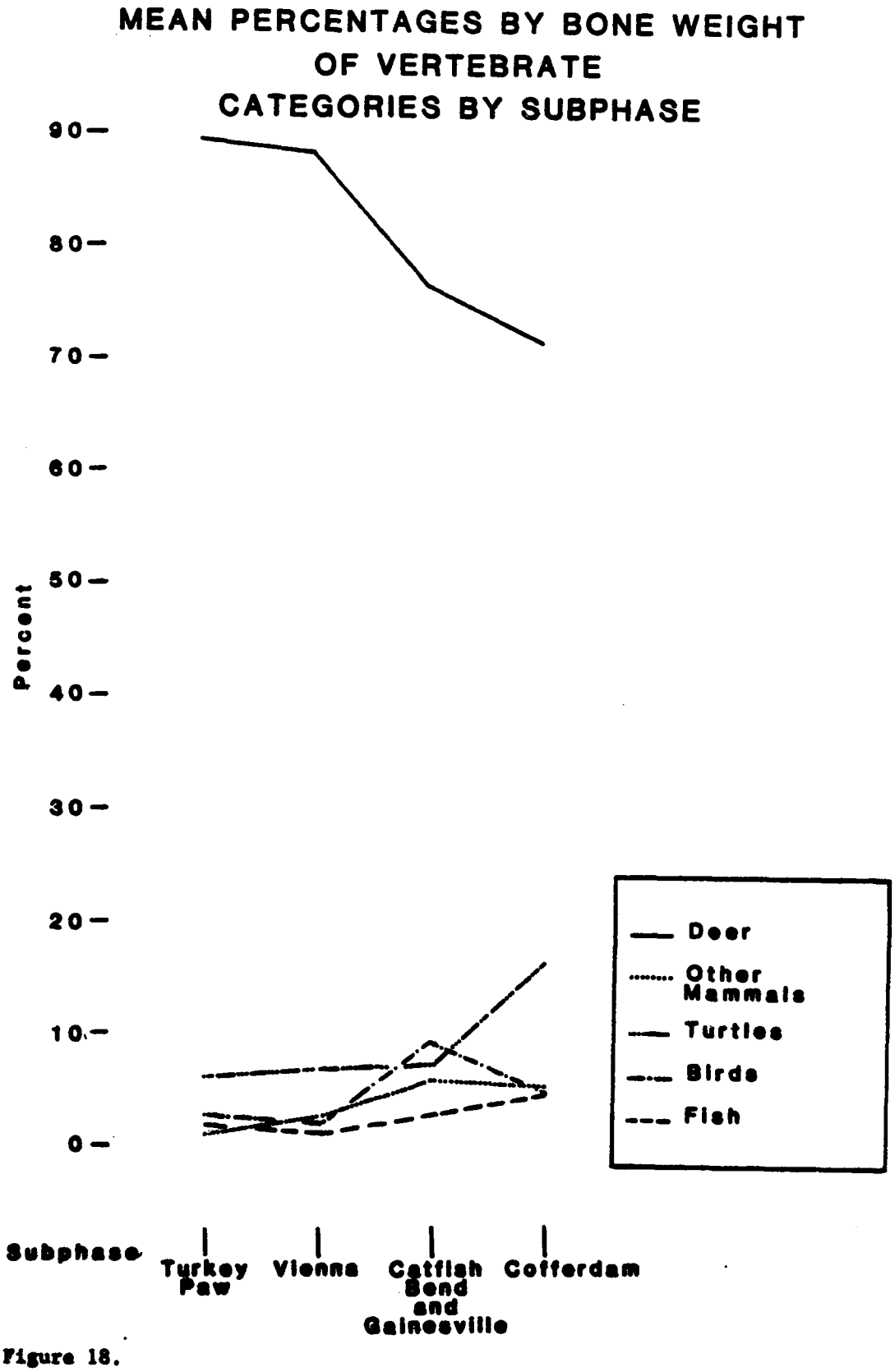

MEAN PERCENTAGES BY BONE WEIGHT
OF VERTEBRATE
CATEGORIES BY SUBPHASE
90
80
70
60
50
40
30
20
10
0
Percent
Deer
Other Mammals
Turtles
Birds
Fish
Subphase
Turkey Paw
Vienna
Catfish Bend and Gainesville
Cofferdam

Figure 18.

The relative density of bone in Vienna subphase features averaged 47.2 g per cu ft, an increase of approximately 25 percent over the Turkey Paw subphase (Fig. 17). The greatest change in faunal procurement strategies during the Vienna subphase is reflected in the increase of shellfish. In Vienna subphase features, shellfish increased to 1,063 g per cu ft, an increase of 325 percent over the Turkey Paw subphase (Fig. 17).

Features from the following Catfish Bend and subsequent Gainesville subphases were combined as one analytical unit because they could not be consistently separated ceramically. Together these units date from about A.D. 900 to A.D. 1100. During this time, the frequency of deer bone dropped to a mean of 76.5 percent by bone weight, a decrease of about 8 percent from the Vienna subphase (Fig. 18). At the same time, other smaller mammals increased in frequency to a mean of 5.3 percent by bone weight--double that of the Vienna subphase. Bones of other small species increased dramatically in frequency. Turtle increased to 7.2 percent; bird increased to 9.0 percent and fish increased to 2.1 percent (Woodrick 1981, Table 37). Deer were the most frequently hunted animals, followed by squirrel (11.8 percent), turkey (10.1 percent), raccoon (4.1 percent), rabbit (3.6 percent), beaver (3.3 percent), and opossum (2.5 percent). Striped skunk, black bear, gray fox, and domestic dog bones appeared at frequencies of less than 1 percent (Woodrick 1981, Table 38).

The average density of bone for Catfish Bend and Gainesville subphase features is approximately the same as the earlier Vienna subphase. The density of bone from Catfish Bend and Gainesville subphase features at Site 1Pi61 averaged 33.5 g per cu ft. The bone from a very large pit, Feature 51, at Site 1Pi33 had a frequency of 51.8 g per cu ft. The shellfish frequencies from these features were also similar to those of the earlier Vienna subphase features. Shellfish mean density for Site 1Pi61 was 2,173.6 g per cu ft and the mean density for Feature 51 at Site 1Pi33 was 676 g per cu ft. The mean shellfish density at both sites was 1,235.8 g per cu ft.

The relative amount of deer bone decreased even further during the Cofferdam subphase which is probably partially contemporaneous and slightly later than the Gainesville subphase. During the Cofferdam subphase, the bone weight of deer dropped to 70.9 percent (Fig. 18). The mean bone weight of other mammals remained approximately constant at 4.7 percent. The mean bone weight of turtle and fish is 16.1 percent and 4.1 percent, respectively--double that of the Catfish Bend and Gainesville components. The mean percentage of bird bone, however, dropped to 4.2 percent (Woodrick 1981, Table 37). Smaller mammals included squirrel (11.6 percent), rabbit (8.6 percent), raccoon (8.3 percent), turkey (6.0 percent), opossum (4.7 percent) and beaver (1.0 percent). Less frequently represented mammals included muskrat, domestic dog, gray fox, striped skunk, and bobcat (Woodrick 1981, Table 38).

Perhaps the most striking difference between the Cofferdam subphase and other Miller III faunal inventories is the decrease in the total amounts of shellfish and bone in the Cofferdam subphase features (Fig. 17). The mean bone density of Cofferdam subphase features at Site 1Gr1X1 was only 15.7 g per cu ft. At Site 1Gr2, bone densities were only 6.6 g per cu ft. The mean shellfish densities at these sites were also low.

The shellfish density was only 41.6 g per cu ft at Site 1Gr1X1 and only 71.2 g per cu ft at Site 1Gr2. Woodrick (1981) suggested that perhaps these low densities were either a result of differential methods of refuse disposal or a result of seasonal variation. To test the first hypothesis, the bone density within the midden at Site 1Gr2 was calculated from samples taken where there was good stratigraphic separation between the Cofferdam stratum and earlier and later middens. The bone density in the Cofferdam midden was only 8.3 g per cu ft, very close to the 6.6 g per cu ft found in the features. To test the second hypothesis, the floral analysis for sites 1Gr1X1 and 1Gr2 was consulted. The floral analysis indicates rather conclusively that these components were deposited during the summer and fall months, the same seasons of occupation as the Vienna, Catfish Bend, and Gainesville components. Perhaps the low bone and shellfish densities at Sites 1Gr1X1 and 1Gr2 are an accident of sampling, but this seems unlikely. This is probably a question that will have to be answered by future excavation and further comparisons of Miller III components.

House Forms

Evidence for Miller III house shapes and sizes is totally lacking for some subphases but relatively complete for others. Most Miller III sites were composed of several temporally distinct components, resulting archaeologically in several temporally distinct but spatially overlapping communities. The pit complexes of these communities can usually be distinguished by the abundance of Miller III ceramics. Structures, constructed of individually set posts, were not easily segregated temporally because all of the Miller III subphases are defined by relative percentages of certain ceramic varieties, rather than by the presence of certain diagnostic types. The small sherd counts from most posts were not amenable to percentage analysis. Further, the post holes were no doubt filled with midden or old mixed refuse from several primary contexts that was probably not contemporaneous with the post hole. Not only are house patterns of individually set posts difficult to define, but they are almost impossible to segregate by content because of the temporally mixed artifacts they contain. Perhaps the most effective means of defining Miller III houses is by excavating single component sites or possibly by excavating the outer perimeter of multicomponent sites where house construction and thus the post hole concentrations are not as dense.

A total of eight probable Miller III houses has been excavated. Two of the earliest of these, which probably date to the later part of the the Vienna subphase, were excavated at the Tibbee Creek site (O'Hear et al. 1981). At that site, O'Hear found one complete and one partial structure. One, Structure 2, was circular, the other, Structure 3, was oval. Both were comprised of individually set posts. The complete structure measured 5 m (16.40 ft) in diameter and was composed of 65 posts with a mean diameter of 18.30 cm (0.60 ft). Inside the structure were 25 other posts, 11 of which may have formed an internal partition (O'Hear et al. 1981, Fig. 16). A radiocarbon sample from the only interior feature, the central hearth, dated this structure at A.D. 965±55 (O'Hear et al. 1981:99-105). The ceramic complex of the house and the Miller III component at the site is virtually the same as the late Vienna subphase defined in the Gaines-

ville Lake area. The Vienna subphase is presently dated between A.D. 750 and A.D. 900. Hence, at the minus 1 sigma factor, the Tibbee Creek structure date is probably acceptable or only slightly late. The partial house excavated at the Tibbee Creek site also probably dates to the early Vienna subphase. A total of 30 post holes, with a mean diameter of 18 cm (0.59 ft), was associated with this partial structure (O'Hear et al. 1981:106).

For the following Catfish Bend subphase, only one possible house from Site 1Pi61 has been identified--Structure 5, Feature 98. This unique oval structure was 6.7 m by 3.2 m (22.1 ft by 10.4 ft)) with a depressed basin floor 21.34 (0.7 ft) deep. An elongated basin 3.05 m (10 ft) long at the southern end may have served as an entrance. Two tightly flexed burials were interred beneath the structure floor. Numerous post holes in and around this structure could not be definitely associated with it (Jenkins and Ensor 1981:139, Table 18). This structure was not a typical dwelling. Considering the large number of Catfish Bend features at the site, there must have been several other structures dating to this subphase but post holes were so numerous that individual structures of single post construction could not be defined with any confidence.

Four other excavated Miller III houses from Site 1Pi61 in the Gainesville Lake area date to the Gainesville subphase (Jenkins and Ensor 1981). At that site, four rectangular semisubterranean houses, Structures 1, 2, 3, and 4, were found. The structures were not deep; their floors were constructed by the excavation of a basin to a maximum depth of 12.19 cm (0.4 ft). Small posts had been set just inside of the outer edge of the semisubterranean floor. Structure 3 had been rebuilt at least once. Wall trenches along both sides of the long axis of the depressed floor cut through parts of pre-existing individual posts. This was also the only structure which had a burial in its floor. All structures except Structure 4 contained a central fire basin. The long axis of two adjacent structures in the southern portion of the site were oriented east to west. Two adjacent structures in the northern portion of the site had different orientations. Structure 2 was oriented northeast to southwest. Structure 4 was oriented north to south. The smallest of these structures measured 3.0 m by 1.8 m (10.0 ft by 6.0 ft) and the largest measured 4.6 m by 3.4 m (15 ft by 11 ft) (Jenkins and Ensor 1981:131-141, Figs. 104, 107, 110-115). These structures were easily defined because of their semisubterranean construction. When the midden was removed with heavy equipment, the structures were clearly defined as dark rectangular stains. It is not known if individual post structures were associated with these Gainesville subphase features.

One possible Cofferdam subphase structure was defined at the Bynum site (Cotter and Corbett 1951), where a small Miller III component was characterized by approximately 25 percent Baytown Plain and 75 percent Mulberry Creek Cord Marked (Cotter and Corbett 1951, Tables 13-15). Large Miller I structures at Bynum were dispersed in a northwest to southeast axis across the site. The Miller III structure, Feature 22, was not part of this group and it is much smaller, much like the earlier Vienna subphase structures. It is oval with a maximum dimension of 4.57 m (15 ft) and supported by 44 individually set posts. A single fi[illegible] pit was slightly off center. Unfortunately, no definite ceramic [illegible]so[illegible]ations could be made. Both Miller I and Miller III ceramic types were [illegible]ecovered within the structure (Cotter and Corbett 1951:12-13).

Settlement Patterns

Miller III environmental adaptation can best be characterized as a culmination of floodplain forest efficiency. The available survey data suggests that the large Miller III base camps were concentrated on the floodplain in an area extending from just north of Columbus, Mississippi, south to about Demopolis, Alabama. This region corresponds approximately to the Black Prairie physiographic district. During the Miller III phase a dramatic population increase was probably associated with the introduction of corn and the small triangular projectile point. This population increase is reflected in the greater number of Miller III base camps and larger size and midden density of Miller III sites. The increase in midden density could also be attributed to increased sedentariness. Population growth in the Gainesville Lake area was reflected by an increase in base camps from 5 during the Miller II phase to 25 during the Miller III phase. The base camps were characteristically compact, dark middens containing large amounts of shellfish, animal bone, pottery, fire cracked rock, and charcoal.

The Miller III settlement system was basically a direct continuation of the Miller II system but with a greater emphasis on riverine resources such as shellfish, turtles, and fish. Undoubtedly, the introduction of a small amount of corn influenced settlement distribution to some degree and probably allowed more pronounced sedentariness. Corn was not, however, a primary staple. It comprised only 1 percent of the Miller III floral inventory (Caddell 1981a).

The Miller III people, like the Miller II people, seem to have participated in a central based wandering type of settlement system. Beardsley et al. (1956:138) define this system as, "A community that spends part of each year wandering and the rest at a settlement or 'central base,' to which it may or may not consistently return in subsequent years."

Two types of Miller III sites have been recognized in the Gainesville Lake area; the large base camps are a stark contrast to the smaller transitory camps. Transitory camps were recognized by the lack of any appreciable midden accumulation, only a sparse scattering of a limited variety of ceramics and lithics and often a small amount of shellfish. Some of these small sites contained a surprising amount of lithic debris and were interpreted as hunting camps.

There was probably more than one type of task specific transitory camp, but excavation of a sufficient number of these sites has not yet permitted further distinctions. Present mitigation efforts in the Tennessee-Tombigbee Waterway have concentrated on the larger and more productive sites. Most of the large base camps, with few exceptions, are located on the upper terraces of the Tombigbee and Noxubee River floodplains. The only presently known exception is Site 1Pi65 located four miles up Bogue Chitto Creek. Both the base camps and transitory camps were situated primarily on sandy loam and silt loam soils. Fine sands were less frequently occupied (Jenkins et al. 1975). Informal surveys outside the Gainesville Lake area by Jenkins, Blaine Ensor, and Tommy Kimbrell, a local informant, indicate that transitory camps were located both east of the floodplain in the Fall Line Hills and west of the floodplain in the

Prairie. Floral remains from the Gainesville Lake area base camps indicate these sites were occupied during the summer through the fall and probably during the winter as well (Caddell 1981a). The very large number of shellfish recovered from these sites also suggests a summer and fall occupation. During these months, shellfish could be easily gathered. The river is at its yearly low at this time.

During the late winter and spring months, the Miller III people may have separated into smaller groups to exploit the wild resources of the floodplain, Fall Line Hills, and Black Prairie. Few of the small transitory camps resulting from these activities have been systematically examined. Some of these transitory camps could represent task specific procurement camps, occupied sporadically but contemporaneously with the base camps. It is also possible that a few people remained in residence at the base camps all year.

Ceremonialism

One of the most salient characteristics of the Miller III phase is the lack of archaeological evidence for ceremonialism. No mounds are known for this phase. Burials, however, were evidently not confined to the village area during the early part of the phase. Although a large early Miller III Vienna subphase base camp was excavated at Site 1Pi61, only three or possibly four burial pits were encountered. All of these burials were tightly flexed with no consistent orientation and contained no direct burial associations. Two or possibly three early Miller III Vienna subphase burials were found by O'Hear at the Tibbee Creek site.

> Each body was placed on its left side in a small shallow pit which was just large enough to contain the tightly flexed body. The legs were drawn up tightly against the body. The body does not seem to have been oriented with regard to the cardinal directions. The only grave goods found with the Miller III interments was a large sherd from a Tishomingo [Mulberry Creek] Cordmarked bowl which covered the chest area of Burial 10 (O'Hear and Larsen 1981:147-148).

Direct associations, or grave goods do not occur with any consistency until the Catfish Bend subphase. At Site 1Pi61, three well defined Catfish Bend cemeteries were located (Appendix 3). Most burials in these cemeteries were tightly flexed and were not consistently oriented in any particular direction. A few individuals were buried in recycled refuse or cooking pits, but the majority were interred in large or small basin shaped graves probably dug purposely for burial. A total of 10 individuals out of 45 in the Catfish Bend cemeteries contained direct artifact associations. These were associated with two adult males, six adult females, and two children.

Two cemeteries contained a young adult female burial in a sitting position (Burials 28 and 59). Each of these women had worn a beaded garment decorated with hundreds of gastropods and one possessed a shell pendant.

Two Gainesville subphase cemeteries were also located at Site 1Pi61 (Appendix 3). The burials in these cemeteries were usually semiflexed with legs to one side. Most of these individuals were oriented with their heads to the east, southeast, or northeast. Most Gainesville subphase burials were interred in shallow, rectangular basins evidently excavated purposely as burial pits. A total of 12 of the 33 individuals in these two cemeteries contained artifacts. All age groups possessed direct burial associations (Appendix 3). Associations consisted of two greenstone celts, two bear canines, shell pendants, and numerous shell beads. A more detailed description and comparison of these cemeteries is presented in Appendix 3.

There seems to be more variability in burial patterns during the Cofferdam subphase than during any other Miller III subphase. At the Cofferdam site, the norm for Miller III burials appears to have been placement of the body on the back in a semiflexed position with the legs to the side. Burials do not appear to have been consistently oriented in any particular direction. Only one tightly flexed burial was found. Burials were usually placed large recycled storage or cooking pits. The only direct artifact association was a large Mulberry Creek Cord Marked sherd with Burial 24 (Blakeman et al. 1976:87-104).

Of the two large Cofferdam subphase components excavated at Sites 1Gr1X1 and 1Gr2 in the Gainesville Lake area, only two burials were recovered at Site 1Gr1X1. This is surprising considering the large number of features associated with these Cofferdam components. Of the two burials at Site 1Gr1X1, one was semiflexed and the other was very tightly flexed. No artifacts were directly associated with either of these burials.

Several tightly flexed Miller III phase burials were found within the village area of the Bynum site. Ceramic evidence from the site suggests that these burials date to the Cofferdam subphase. None of these burials contained any direct associations, but six of the eleven were located with a cluster of pits resembling a cemetery (Cotter and Corbett 1951:14-15).

Space, Time, and External Relationships

Previous surveys in the upper Tombigbee drainage (Blakeman 1976, Hubbert 1978, Penman 1977, Atkinson 1978) indicate that the northern range of the Miller III phase extends at least as far as the upper Tombigbee drainage and overlaps spatially with the Miller II phase. The majority of the upper Tombigbee sites, however, appear to be much smaller than Miller III sites farther south along the central Tombigbee River. Recent surveys along the central and lower Tombigbee River indicate that large Miller III components do not extend any farther south than Demopolis, Alabama (Sheldon 1981). Smaller transitory camps do extend approximately 10 to 15 miles south of Demopolis (Brose et al. 1982). The easternmost distribution of the Miller III phase overlaps spatially with the West Jefferson phase (Jenkins and Nielsen 1974). Miller III sites extend at least 10 miles up the Warrior River from its junction with the Tombigbee River at Demopolis, Alabama (Sheldon et al. 1981). Recent surveys along the Warrior River in the Moundville area indicate that the percentages of Mulberry

Creek Cord Marked in West Jefferson phase components increase in frequency south of Moundville. North of Moundville, West Jefferson components contain less cord marked pottery (Welch 1980, Fig. 3).

The spatial distribution of the Miller III phase west of the Tombigbee River is not well defined. Although Penman (1977) recovered Baytown Plain sherds in several watersheds in central Mississippi, this type by itself is not sufficiently diagnostic to plot the distribution of a phase. The Miller III phase should spatially overlap with local Baytown phases in the Mississippi drainage. In order to establish the spatial and cultural relationships between Baytown phases such as Deasonville and Bayland (Phillips 1970:907) and the Miller III phase, it will be necessary to conduct more archaeological investigations in the North Central Hills physiographic region of Mississippi.

The temporal dimensions of the Miller III phase and its attendant subphases can best be demonstrated by radiocarbon dates from the Tombigbee Valley. The Miller III phase can also be relatively dated in a general scheme by ceramic comparisons with various Baytown and Coles Creek phases of the lower Mississippi Valley and with the McKelvey phase of the western Tennessee Valley. Major ceramic types such as Baytown Plain and Mulberry Creek Cord Marked occur in all three areas. Varying percentages of less frequent types such as Wheeler Check Stamped, Withers Fabric Marked, Alligator Incised, Larto Red Filmed, Evansville Punctated, and Yates Net Impressed are also present. These types appear first in the Mississippi Valley around A.D. 400 (Phillips 1970:7, Belmont 1980, Table 1), and later in the Tennessee Valley within the McKelvey complex around A.D. 700 or A.D. 800 (Eugene Futato, personal communication 1981).

Recent excavations in the Tombigbee drainage have provided radiometric dates for most of the Miller III subphases. The early Vienna subphase is the earliest of these subphases. No dates were obtained from the early Vienna subphase components in the Gainesville Lake area but three dates obtained at the Kellogg Village site (Atkinson et al. 1980, Table 21) may aid in dating the early Vienna subphase. The major Miller III occupation at the Kellogg Village site appears to have been during the early Vienna subphase. Feature 44, dated A.D. 780±205, and Feature 84, dated A.D. 780±430 both contained early Vienna assemblages. Although the large sigma factors somewhat damage the integrity of these dates, they are close to the A.D. 600 to A.D. 750 range suggested by Jenkins (1981) for this subphase. Other dates of A.D. 790±85 from Feature 88 and A.D. 570± 395 from Feature 21 probably also date this component. The sherd counts from these features are small, however, and they cannot be assigned to any subphase with certainty.

Three radiocarbon dates from the Gainesville Lake area (Jenkins 1981, Table 1) and one date from the Tibbee Creek site (O'Hear et al. 1981) have been obtained for the late Vienna subphase. At Site 1Gr2 the late Vienna component Feature 115 dated A.D. 760±55 and Feature 126 dated A.D. 730±50. At Site 1Pi61 a late Vienna assemblage from Feature 25 was dated at A.D. 910±50 (Jenkins 1981, Table 1). At the Tibbee Creek site, the primary Miller III occupation appears to be a late Vienna component. Structure 2, a probable late Vienna subphase house, dated A.D. 965±55 (O'Hear et al.

1981). From these radiocarbon determinations, it is suggested that the late Vienna subphase lasted from A.D. 750 to A.D. 900.

The succeeding Catfish Bend subphase has not been dated. Currently, the only excavated components of the subphase are from the Gainesville Lake area. Samples dating the early Vienna subphase and the Catfish Bend subphase were not submitted because of a misunderstanding over funding with the Corps of Engineers representative. These samples are in storage at Mound State Monument. The Catfish Bend subphase may date from A.D. 900 to A.D. 1000 since the proposed ending date of the late Vienna subphase is A.D. 900 and the beginning date of the Gainesville subphase is A.D. 1000.

The following Gainesville subphase has been dated by two radiocarbon determinations from Site 1Pi61 and two from Site 1Pi33 (Jenkins 1981, Table 1). At Site 1Pi61, a carbon sample from Structure 1 yielded a date of A.D. 1240±80 and and a carbon sample from Structure 4 yielded a date of A.D. 1030±55. At Site 1Pi33, two dates were obtained from Feature 51. A carbon sample from the very bottom of this large pit dated A.D. 1030±55 and another carbon sample from near the top of the feature also dated A.D. 1030±55. From these dates it is suggested that the Gainesville subphase dates from approximately A.D. 1000 to A.D. 1100. The A.D. 1240±80 date from Structure 1 at Site 1Pi61 is inconsistent with the other dates and is probably slightly late.

The Cofferdam subphase has been dated by a series of radiocarbon determinations from the Cofferdam site (Blakeman et al. 1976) and from Sites 1Gr1X1 and 1Gr2 (Jenkins 1981). Six dates were obtained from the Cofferdam component at the Cofferdam site. Three dates from Features F and EE between A.D. 400 and 700 are inconsistent with other dates. Another sample from Feature F dated A.D. 1180±70 and a sample from Feature Z dated A.D. 1215±110. These two dates are the most acceptable as they closely agree with the dates from the Gainesville Lake area. Another date of A.D. 1465±70 from Feature EE is probably too late (Blakeman et al. 1976:107, Atkinson et al. 1980:22).

Two Cofferdam subphase dates were obtained from Site 1Gr1X1. Feature 5 dated A.D. 1180±40 and Feature 12 dated A.D. 1160±45. Four dates were obtained from Site 1Gr2. All of these dates are fairly consistent with one another and with the dates from Site 1Gr1X1 as well as two of the dates from the Cofferdam site. Feature 75 dated A.D. 970±40, Feature 70 dated A.D. 880±50, Feature 90 dated A.D. 1130±45 and Feature 66 dated A.D. 980±40 (Jenkins 1981, Table 1). All of these dates place this subphase at least as early as A.D. 1000 and possibly as early as A.D. 900. The dates indicate that the Cofferdam subphase lasted at least until A.D. 1100 and possibly as late as A.D. 1200. The Cofferdam subphase is probably contemporaneous with the Gainesville subphase and possibly contemporaneous with the earlier Catfish Bend subphase.

The Miller III phase is closely related to the Yazoo drainage Deasonville complex or phase (Ford 1936:141-171, Phillips 1970:907). Ford stated that there were also Deasonville-like complexes in the valleys of the Pearl and Chickasawhay Rivers (Ford 1936:143). Although these Deasonville complexes Ford saw on the Pearl and Chickasawhay Rivers were probably not Deasonville complexes in the strictest use of the term, they were

morphologically very similar to lower Yazoo Deasonville components. Phillips (1970:907) now restricts use of the Deasonville complex as a taxonomic unit to the Yazoo drainage.

It is probably significant that the Deasonville phase, the Deasonville-like complexes of the Pearl and Chickasawhay Rivers, and the Miller III phase are all situated on rivers that have their headwaters in the North Central Hills physiographic district of Mississippi. The earlier Miller I complex, the Twin Lakes complex, the Slaughter complex, and possibly the Boyd complex probably resulted from a southern extention of the Pinson complex of the west Tennessee plain into the Mississippi North Central Hills during the earlier part of the Middle Woodland period. The Deasonville phase, and other Deasonville-like (Baytown) complexes, and the Miller III phase undoubtedly are Late Woodland developments from these earlier complexes. Their similarity probably resulted from this common parentage.

Miller III ceramics also closely resemble the western Tennessee Valley McKelvey phase ceramics. Types common to both areas include Baytown (McKelvey) Plain, Mulberry Creek Cord Marked, Wheeler Check Stamped, Alligator (Kirby) Incised, Withers Fabric Marked, and Evansville (Benson) Punctated. Current evidence suggests that the McKelvey phase ceramics developed locally from two regionally distinct Middle Woodland complexes (Eugene Futato, personnal communication, December 1981). One McKelvey complex on the western Tennessee Valley floodplain developed from a late Copena complex comprised of Mulberry Creek Plain and Wright Check Stamped. The resultant McKelvey complex is comprised primarily of the grog tempered types McKelvey plain and Wheeler Check Stamped with a smaller amount of Mulberry Creek Cord Marked. This complex is very similar to Phillips' (1970:912-914) so called northern Coles Creek complexes that extend geographically from Memphis, Tennessee to southeast Missouri.

The remaining McKelvey complex developed in the uplands south of the Tennessee River floodplain. The preceding local Middle Woodland groups in this area constructed stone mounds and manufactured the Mulberry Creek Plain and Flint River Cord Marked limestone tempered pottery types. The McKelvey complex that developed from this complex consists of the grog tempered types McKelvey Plain and Mulberry Creek Cord Marked. Collections from these components look very much like Tombigbee Valley Miller III ceramics. It is not known if the Baytown-Coles Creek attributes that resulted in the formation of these McKelvey complexes were derived from the southeast Missouri area via the Tennessee River or from Mississippi via the Tombigbee drainage. It is clear, however, that there was communication between western Tennessee Valley and central Tombigbee Valley groups during the initial Late Woodland development, as evidenced by the presence of post-Copena limestone tempered assemblages within the Turkey Paw ceramic complex dominated by Mulberry Creek Plain.

CHAPTER VI

MISSISSIPPIAN STAGE

By A.D. 1000 a new and distinct culture-type had appeared within the Tombigbee drainage. This new development was first defined in the Middle Mississippi valley where the Mississippian stage was the earliest, strongest, and most elaborate (Holmes 1903, Willey 1966:292-293, Griffin 1967: 189).

Mississippian is characterized by a wide variety of adaptations made by societies that depended upon agriculture for their basic storable food supply. The religious ceremonialism and organization associated with agriculture spread widely throughout most of the southeastern United States. At this time, distinctive art forms associated with the Southeastern Ceremonial Complex were produced, traded, and buried with civil, religious, and war leaders. Town ceremonial centers fortified by bastioned stockades also appeared at this time. The towns frequently were composed of wattle and daub houses clustered around a central plaza bordered by flat-topped earthern mounds. Mississippian ceramic technology was more highly developed than any previous time. Although the utilitarian pottery in most complexes was dominated by large plain vessels, a sophisticated array of minority types appeared in most areas. Red filming, bichrome, polychrome, negative painting, and black burnished surface finishes were incorporated in these minority wares. Exotic forms such as the stirrup-necked bottle and human and animal effigies may have been manufactured by specialists (Griffin 1967:189-190).

The Mississippian stage has traditionally been divided into early, middle, and late (Griffin 1952, Fig. 205) or Temple Mound I and Temple Mound II (Willey 1966, Fig. 5-2) periods. The Griffin system will be used here since his triparte division is a more useful integrative device.

EARLY MISSISSIPPIAN PERIOD
(A.D. 1000 - A.D. 1200)

There has been considerable discussion and argument concerning the origin, development, and dispersal mechanism of the Mississippian culture-type in the Southeast. Because of the dramatic and swift transition in the Late Woodland to early Mississippian material culture, many Southeastern archaeologists interpreted Mississippian as a result of whole population movements from the middle Mississippi Valley. The fates of locally or regionally displaced Late Woodland populations were unknown. This migration hypothesis seemed to fit well with the origin myths of several southeastern tribes. As more data with better temporal control accumulated, many developmental frameworks for regional Mississippian manifestations were defined. It was clear that many of the regional mature Mississipian cultures developed in place and were not products of migrations from other regions. An alternative hypothesis became popular during the 1970s. This hypothesis posited that the appearance of Missis-

sippian was a result of simultaneous regional developments and that there were very few population movements or none. This interpretive trend may be primarily a result of a concluding statement made by Phillips, Ford and Griffin following their survey of the lower Mississippi Valley. They stated:

> In fact, we are becoming increasingly doubtful that a single center for this development exists anywhere. We envisage rather a number of centers in which this culture was developing more or less simultaneously along parallel lines with continuing interaction between them (Phillips et al. 1951:451).

Current evidence clearly indicates that most mature Misssissippian cultures developed parallel to one another with continuing interaction between them. There is, however, both indirect and direct evidence for movements of people.

Some regional Mississippian cultures reached a higher form of development earlier than others. The best documented example is the Cahokia center of the central Mississippi Valley region. Griffin (1967:188) and Morse (1977:193-206) have hypothesized movements from the central Mississippi Valley between A.D. 900 and A.D. 1000.

As more data and even better regional chronologies are developed, it is becoming apparent that in some areas a developmental continuum from Late Woodland to early Mississippian cannot be documented. And in fact some data that has been interpreted as evidence for in-place development of early Mississippian from Late Woodland could also be interpreted as acculturation of the Late Woodland population by a small intrusive Mississippian group with a more efficient technology and sociopolitical organization, an instance of the Law of Cultural Dominance (Sahlins and Service 1960:75). Current conflicting interpretations of the West Jefferson to early Moundville transition are a good example (Jenkins 1976, Peebles 1978:373, Seckinger and Jenkins 1980). One thing is clear: we do not yet have adequate control of the data pertinent to the initial phases of Mississippian development to prove any hypothesis on that subject.

It is possible that the Tombigbee Valley Mississippian culture-type had its ultimate origin in the central Mississippi Valley where Cahokia was a primary early Mississippian center (Griffin 1952, Fowler and Hall 1972). This site consists of 5.8 square miles of midden refuse and over 100 mounds, including Monks Mound which is over 100 ft high and covers 15 acres (Fowler 1969). The earliest Mississippian phase at Cahokia, the Fairmount phase, A.D. 900 to A.D. 1050, displays a higher level of development than any of the Mississippian complexes outside the Mississippi Valley at this time. During the Fairmount phase, construction of Monks Mound (Reed et al. 1968); the planned alignment of Cahokia; the construction of large woodhenges or "sun circles (Wittry 1969);" and elaborate burial ceremonialism for an elite class was begun (Fowler 1969, Fowler and Hall 1972).

Just how and why this culture-type evolved in the central Mississippi Valley and rapidly spread throughout the Southeast is not clear. Many archaeologists have probably overreacted to Phillips, Ford, and Griffin's

(1951:451) statement postulating parallel development of Mississippian cultures. Most evidence clearly indicates there was parallel development after A.D. 1000 or 1100. Prior to that time, however, there may have been several mechanisms or situtations which provided the impetus for the Mississippianization of the numerous regional Woodland cultures. Various cultural contact situations ranging from trait unit to site unit intrusion (Wauchope 1956:1-26), or even one type of cultural contact situation followed in time by another type may have occurred. Jenkins (1976) used Wauchope's (1956) culture contact Type B2 followed by Type A3 to construct a model for the appearance of the Moundville I phase. An almost identical model was outlined by Morse (1977:193-206) to explicate the appearance of the Big Lake phase.

The regional manifestation of the Mississippian stage or culture-type is here referred to as the Moundville variant. At least four or more local manifestations of this variant are found in the major river drainages from central Alabama to eastern Mississippi (Figs. 19 and 20). The local manifestation of the Moundville variant in the central Tombigbee drainage is the Summerville I-III continuum, described by Peebles (1981) as a result of mitigation efforts at the Lubbub Creek Archaeological Locality for the United States Army Corps of Engineers. Forty-five miles to the northwest, the Tibbee Creek-Lyons Bluff sequence has been described (Marshall 1977:53-58) as a result of investigations at the Lyons Bluff site. This site is located on Tibbee Creek, 15 miles west of its juncture with the Tombigbee River. Both of these sequences describe essentially similar content within a similar temporal framework. Both Peebles and Marshall, however, failed to adequately describe the spatial dimensions of their phases, and herein lies a problem. How do these two sequences articulate spatially and with which phase sequence do the several mound sites between them belong?

Jenkins (1975a) and Jenkins et al. (1975) grouped the Mississippian components found in the Gainesville Lake area with the Moundville phase as it was then defined (Peebles 1974). This was a logical decision because the Mississippian materials from the Gainesville Lake area include those from the Lubbub Creek Archaeological Locality and are virtually identical to those at Moundville. There is, however, much more variability at Moundville. Moundville is only 35 miles due east of the Lubbub Creek Archaeological Locality and the Gainesville Lake area.

A few years later Steponaitis (1978) defined the Moundville I-III sequence. This sequence was logically adopted for the Gainesville Lake area (Jenkins 1981) since the types and varieties defined by Steponaitis for the Moundville region were also present in the Gainesville Lake area within a similar temporal sequence. Jenkins (1980:73) had suggested that Marshall's (1977:53-58) sequence be adopted for the Gainsville Lake area since Tibbee Creek and the Gainesville Lake are within the same drainage and only 45 miles apart. Once the Moundville sequence was defined, however (Steponaitis 1978), that sequence was adopted for the Gainesville Lake area (Jenkins 1981). A short time later Peebles (1981) referred to the Moundville sequence in the Gainesville Lake area and the Lubbub Creek Archaeological Locality as Summerville I-III. This position was taken by Peebles because he assumed that the Mississippian center at Lubbub was probably politically separate from the Moundville chiefdom of the ad-

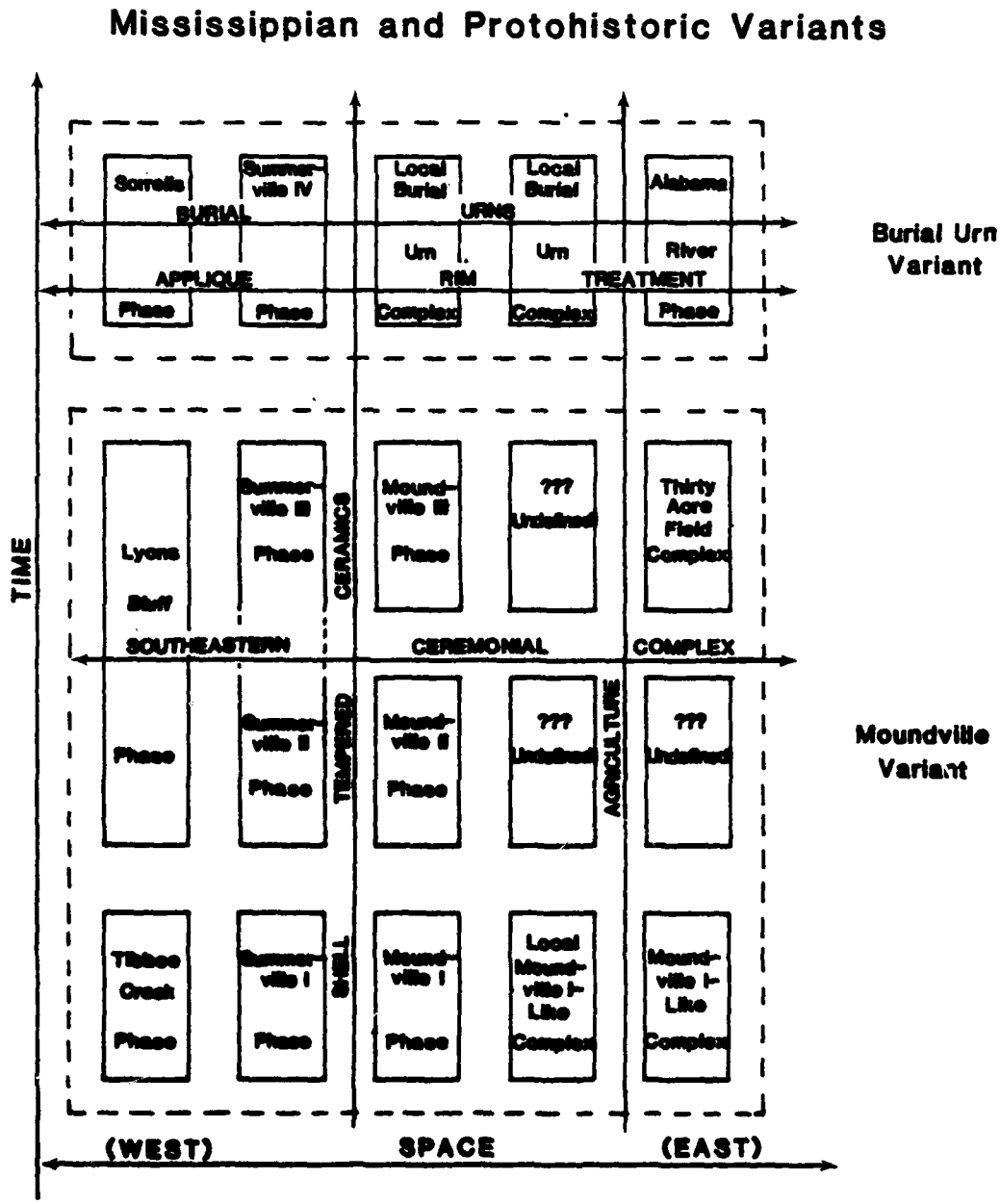
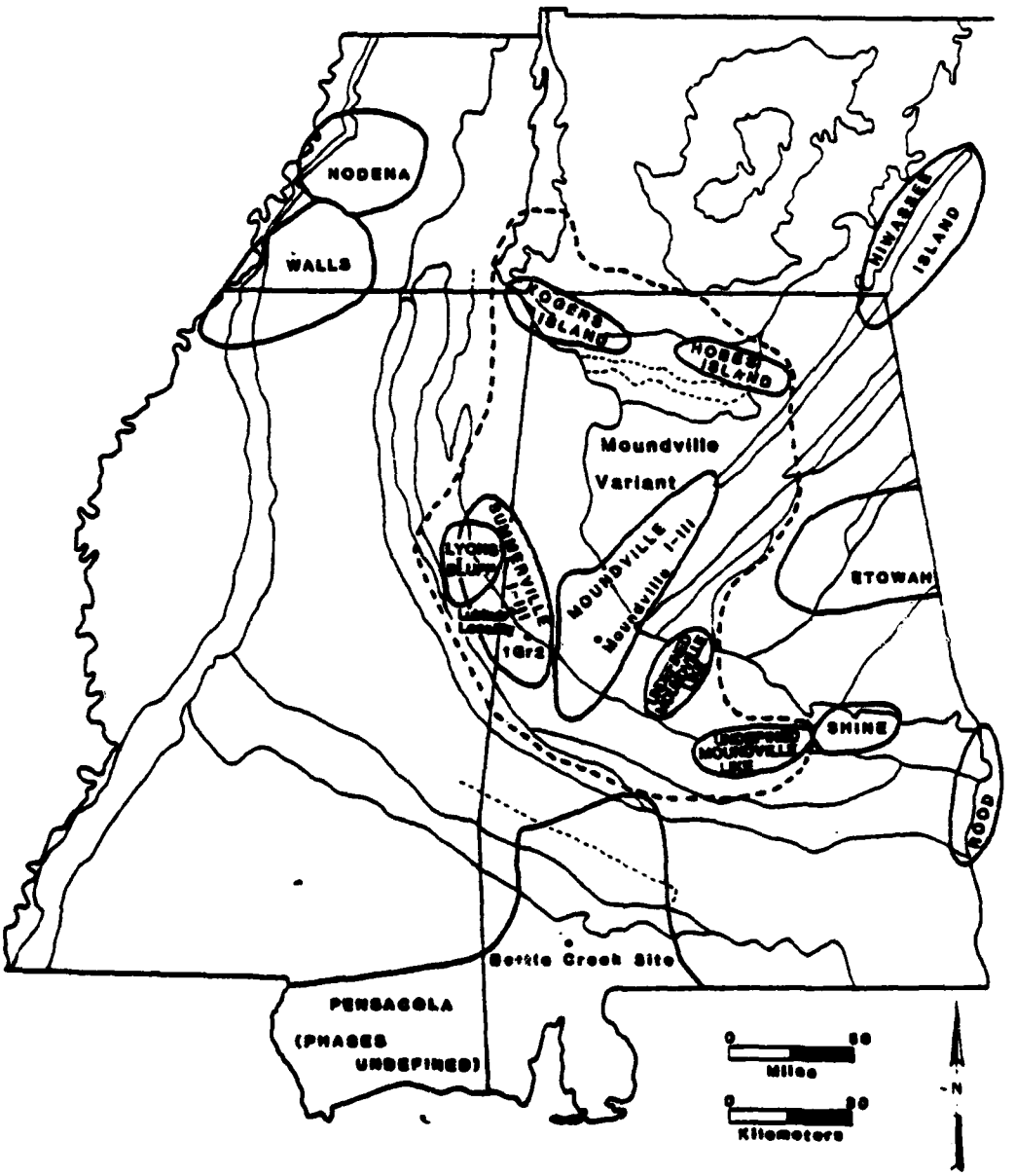

Mississippian and Protohistoric Variants
TIME
Sorrells
Summer-ville IV
Local Burial
Local Burial
Alabama
BURIAL
URNS
Urn
Urn
River
APPLIQUE
RIM
TREATMENT
Phase
Phase
Complex
Complex
Phase
Burial Urn Variant
Lyons Bluff
Summer-ville III
Phase
CERAMICS
Mound-ville III
Phase
???
Undefined
Thirty Acre Field
Complex
SOUTHEASTERN
CEREMONIAL
COMPLEX
Phase
Summer-ville II
Phase
TEMPERED
Mound-ville II
Phase
???
Undefined
AGRICULTURE
???
Undefined
Moundville Variant
Tibbee Creek
Phase
Summer-ville I
Phase
SHELL
Mound-ville I
Phase
Local Mound-ville I-Like
Complex
Mound-ville I-Like
Complex
(WEST)
SPACE
(EAST)

Figure 19.

Selected Mississippian Sites and Manifestations



Adapted from Stephenson and Monroe 1940, Copeland 1968, and Miller 1974
(See Frontispiece for Physiographic Nomenclature)

Figure 20.

joining Warrior Valley (Christopher S. Peebles, personal communication, 1981). Even if this were true, the relationship between Summerville I-III and Tibbee Creek-Lyons Bluff sequences remain to be explicated or reconciled. For the purposes of this synthesis of Gainesville Lake area archaeology, the Summerville sequence has been used because the major body of data to be summarized is taken from the type site for that sequence. The Moundville, Tibbee Creek, and Summerville manifestations, however, are all very closely related in space, time, and content. To further emphasize this relatedness, the term Moundville variant is introduced (Fig. 21). It includes all sites at which the Moundville ceramic series, the types Mississippi Plain, Bell Plain, Moundville Incised, Carthage Incised, and Moundville Engraved, are found as the major complex.

The Summerville I Phase

The Summerville I phase is the local manifestation of the early Mississippian period and an early member of the Moundville variant. It is closely related to the Moundville I phase to the east and to the Tibbee Creek phase located to the northwest of the Lubbub Creek and Gainesville Lake area.

Content

Ceramics

Throughout the Summerville sequence the ceramics were tempered almost exclusively with live shell. A very small amount of grog was occasionally included in the paste. Two basic shell tempered wares, coarse and fine, were manufactured throughout the Summerville sequence. The coarse shell tempered ware contained temper particles that are always over 1.5 mm in diameter. This ware is almost always unburnished and usually fired in an oxidizing environment that produced a pale yellow to strong brown finish. The other major ware has a paste containing fine shell particles that are less than 1.5 mm in diameter. This ware is usually burnished and often fired in a reducing atmosphere. Experiments by this author indicate that the burnishing was probably accomplished by moistening the surface after the vessel had sun dried. This procedure floats the finer particles to the surface and in effect produces something visually similar to a film. When fired in a reducing atmosphere, this ware turned black or very dark gray. When fired in an oxidizing environment, the surfaces turned a reddish yellow, yellowish red, or light gray.

Two distinct technologies seem to have been employed in the construction of the coarse ware and fine ware. The most important technique was the hammer and anvil finishing tradition defined by Van der Leeuw and Hardin (1981). Types and varieties which showed evidence for this tradition were those with coarse shell tempering: Mississippi Plain var. Warrior; Moundville Incised vars. Moundville, Snows Bend, and Carrollton; and Parkin Punctated var. Unspecified. The best evidence for the hammer and anvil finishing technique on these coil-built vessels is the slight faceted effect on the body of the vessel when the coils are compacted by use of the hammer and anvil. Evidence for the second ceramic manufacturing

MISSISSIPPIAN CHRONOLOGY AND NOMENCLATURE

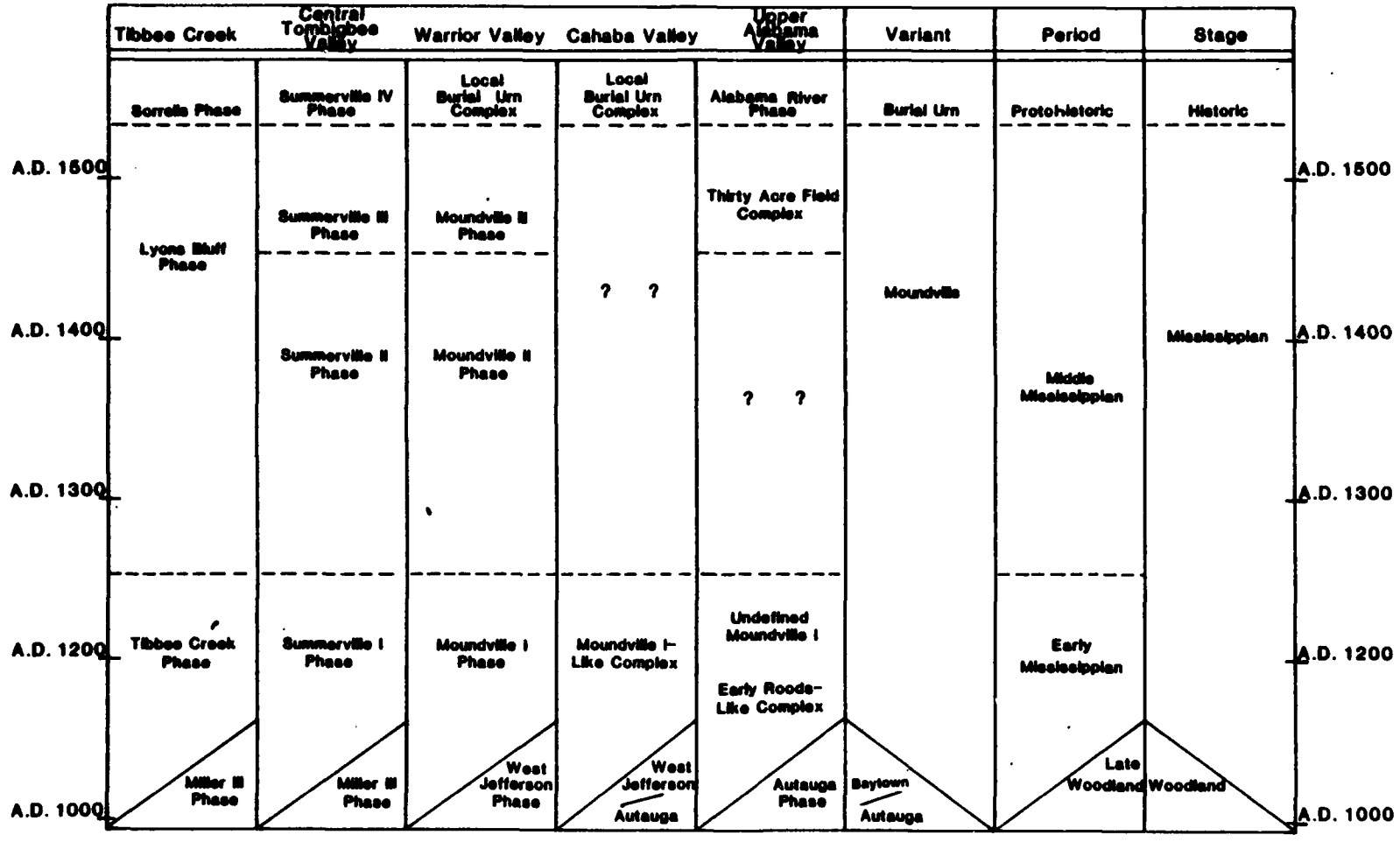


Figure 21.

technology, the rest or mold-assisted coiling method, was confined to the fine shell tempered types and varieties: Bell Plain vars. Hale and Big Sandy and Moundville Engraved vars. Fosters, Taylorville, and Wiggins. A rest or mold allowed the potter to turn the vessel as it was constructed. Mold marks or breaks are evident on many vessels where their mold made sections were fastened together during construction (Mann 1981). It is not known if the initial appearance of these two technologies represent a local development or if they were introduced. There is no evidence for the development of the fine ware technology during the Miller III phase.

Throughout the Summerville sequence, over 90 percent of the ceramics had a plain surface finish with no decoration. Mississippi Plain var. Warrior comprised approximately 80 to 85 percent of the total ceramics, and Bell Plain var. Hale comprised approximately 8 to 10 percent in village middens. The next most numerous varieties are Moundville Incised vars. Moundville, Snows Bend, and Carrollton, although their relative frequencies through time are not documented. The remaining ceramics are decorated fine ware minority varieties. The presence and morphological changes in these varieties are important in defining the Summerville sequence.

Moundville Incised was the dominant decorated type during the Summerville I phase. Var. Moundville was the most frequent variety, followed by var. Carrollton. Minority varieties of fine ware which appear at this time include Carthage Incised vars. Moon Lake and Summerville and Moundville Engraved var. Tuscaloosa. Mound Place Incised vars. Akron and Havana may have been present at this time. Their documentation this early within the sequence, however, is not secure.

Specific vessel shapes are associated with the coarse ware and the fine ware. The coarse ware varieties Mississippi Plain var. Warrior and Moundville Incised var. Moundville comprise a little less than 90 percent of the Summerville I ceramic complex. The predominant vessel shape of these varieties is the standard jar and the neckless jar. Both of these forms have globular bodies. The standard jar is distinguished by a neck that slants outward to the lip or is concave in profile. Neckless jars do have a neck but the inflection point between the neck and the shoulder is not as well defined and the neck never reaches a point of vertical tangency (Steponaitis 1980b:123-124).

Major varieties of the fine ware are Carthage Incised vars. Moon Lake and Summerville and Moundville Engraved var. Tuscaloosa. The vessel shape associated with var. Moon Lake is the flaring rim bowl. The shape associated with vars. Summerville and Tuscaloosa is the subglobular bottle with pedestal base. At Moundville, var. Summerville has been found only on the short necked bowl vessel form.

Lithics

Although a significant number of Mississippian components have been excavated along the central Tombigbee River over the last five years, knowledge of Mississippian lithic technology is relatively poor. At the present time it is impossible to document temporal changes in lithic

technology throughout the Mississippian stage, not because of poor excavation techniques, but because of the depositional characteristics of Mississippian components. Most Mississippian components were deposited over earlier components and are mixed. In addition, Mississippian pit digging and refuse disposal practices differed considerably from earlier time periods. The Mississippians dug few pits for food storage and they frequently deposited their garbage in places that archaeologists generally do not find, rather than in discarded storage pits as the Woodland people did. Furthermore, stratified Mississippian contexts are very rare.

Extensive excavations along the Tombigbee River in recent years permit a few accurate statements about Mississippian lithic technology. The Madison var. Gainesville projectile point type was the predominant Mississippian arrow point. This variety has straight blade edges and a straight base. It is most frequently less than 25 mm is length but it may be longer. These arrow points were usually manufactured from locally available heat treated chert (Ensor 1981a:39-40, 89-91). This type first appears during the Woodland Miller III phase and continues throughout the Mississippian stage. The thermal alteration practices that first evolved during the Miller III phase were continued by the Mississippians.

Subsistence

Determining fine scaled Mississippian subsistence strategies is much more difficult than determining strategies for the Woodland stage. During the Woodland stage, a complex of recurrent subsurface pit shapes reflect processing and storage of gathered foods. Once these pits fell into disuse, items of everyday use, including food refuse were buried in a closed context along with contemporaneous ceramics that could be used to relatively date the pit. Relatively good subsistence data is provided by analyzing these Woodland features.

Mississippian food storage and refuse disposal practices had changed. Only basin shaped pits and other odd shaped pits are present, but even these are rare by Woodland standards. House floors often yield subsistence data, but frequently they were cleaned and provide no information. Middens and dumps frequently provide subsistence data, often in mixed context, dating to several periods and phases within the Mississippian stage. It is thus difficult to recover closed finds contining good Mississippian subsistence data, and as a result it is difficult to trace changes in subsistence strategies during the Mississippian stage.

Other difficulties arise from the fact that over 90 percent of Mississippian ceramics are plain, often rendering a relative chronological assessment of a given Mississippian feature difficult. With the large amount of excavation along the Tenn-Tom Waterway, a number of tightly datable finds have been made, thus allowing statements of subsistance practices by phase rather than general stage or period.

Floral species from Summerville I phase contexts at the Lubbub Creek Archaeological Locality were similar to those from the earlier Miller III phase contexts, but their relative percentages differed. In Summerville I features, corn far outnumbered the nut remains. Approximately 93 percent

of the floral remains were corn, and 7 percent were nut species. Nine sunflower seeds (Helianthus annuus) were also found in Summerville I contexts. Hickory nuts were by far the most important nut food item. Acorns were a distant second. Walnuts and beechnuts were present but comprised only a minute fraction of plant foods. Other seeds in Summerville I contexts were small amounts of persimmon, grape, one bean, maypop, maygrass and other grasses (Caddell 1981b).

The best excavated early Mississippian or Summerville I faunal sample was also collected from the Lubbub Creek Archaeological Locality. Analysis and comparison of the Mississippian contexts representative of Summerville I-IV phases revealed almost no changes in faunal procurement strategies through time. Within each phase, mammals contributed between 87.5 and 89.1 percent of the identified bone calculated by bone weight. Deer were by far the most numerous of the mammals represented. Birds contributed 6.2 to 7.7 percent. Turkey were the most numerous of the birds represented. Turtles comprised 3.7 to 4.7 percent and all other classes combined contributed 1 percent or less. The consistency of these proportions throughout the various phases indicate a great deal of stability in adaptive and faunal procurement strategies throughout the Mississippian stage (Scott 1981:339-342).

Mississippian and Miller III faunal procurement practices appear to have been very similar in terms of species taken. There do appear, however, to have been differences in the relative proportions of some species. During the Mississippian stage there was an increase in the relative frequency of rabbit and in particular there was an increase in cottontail rabbit (S. floridanus) over swamp rabbit (S. aquaticus). The ratio of cottontail to swamp rabbit bone fragments in the Cofferdam subphase was 2:1; in the Mississippian faunal inventory the ratio of cottontail to swamp rabbit was 6.5:1. Lowery (1974:159) has observed that cottontails are typically found in "fairly open country, pastures, and grassy areas adjacent to croplands." Swamp rabbits are generally confined to the floodplain forest (Scott 1981).

Another species change is in the ratio of gray squirrel to fox squirrel. The ratio of gray to fox squirrel fragments in the Cofferdam subphase sample was 12:1. The composite Mississippian sample was 1.8:1. Gray squirrels prefer a climax hardwood forest habitat, but fox squirrels, are more tolerant of open conditions (Golley 1962:100, Scott 1981:363-364).

Scott (1981:363-364) attributes this change in faunal assemblage composition from species favoring a floodplain forest habitat to species that prefer a more open habitat to partial deforestation of the floodplain by Mississippian agricultural practices. This change could also be interpreted as a result of an adaptive strategy to include more prairie species, a trend that became more pronounced by Summerville IV times. Throughout the Mississippian stage there was an increasing reliance on acorns. This trend culminates in Summerville IV times when acorns comprised 85 percent of the total recovered floral assemblage (Caddell 1981b: 272).

Caddell (1981a:13-20) reconstructed the species composition of the various forest habitats tangent to the Gainesville Lake area (Fig. 12) from United States General Land Office Survey notes and plats compiled between 1820 and 1834. These data should accurately reflect the various forests species composition at or about European contact times. The only trees recorded for the prairie were oaks that grow in clumps, especially along streams. During the early fall months these oaks could have provided a maximum concentration of acorns which could be collected with a minimum of effort. At the same time, several kinds of animals, especially deer, turkey, and fox squirrel, would have congregated at these oak clumps to compete for the acorns.

During the fall and winter months turkey tend to aggregate in flocks where the acorn masts are sufficient (Wheeler 1948:28-29). Approximately 11.7 percent of the total area of the Black Belt is suitable turkey range. It has a relatively high b·d density with one bird every 401 acres (Wheeler 1948:9).

The cottontail rabbit is common to the Black Belt or prairie. Recent studies indicate that the prairie has the largest cottontail population as well as the largest cottontail litter size of any physiographic region in Alabama. The cottontail population peak is in August and Septembe·: (Hill 1972:31-37, 75).

Scheduling hunting and gathering activities in the prairie during th. early fall months could have been a rewarding subsistence strategy. The increase of acorns, fox squirrel, and cottontail rabbit in Mississippian faunal inventories may have been a result of such a shift in faunal and floral procurement. If, as suggested by Scott (1981:363-364), the floodplain forest was partially deforested as a result of intensive agriculture, the oaks that comprised 30 percent of the floodplain habitat would had been severly diminished. This would result in a diminished acorn supply for turkey, deer and squirrel, thereby reducing the concentrations of these animals in the floodplains during the fall months.

House Forms

The best and perhaps only examples of Summerville I structures have been found at the Lubbub Creek Archaeological Locality within in the Gainesville Lake area. Here excavations by The University of Michigan (Peebles 1981) revealed domestic structures comprising a village area and public buildings in stratified context within a mound precinct. Both the mound precinct and the village were protected by a palisade which sealed off the neck of a bend of the Tombigbee River. The Summerville I village was separated from the mound precinct by an interior palisade surrounding a rectangular plaza. The mound precinct was restricted to the western end of the plaza. No domestic structures were found within the interior palisaded area. Two definite Summerville I structures and a possible third structure were identified within the sampled portion of the village. Structure 1 in Hectare 500N-400E and Structure 2 in Hectare 400N-300E were oval concentrations of post holes 7 m (23 ft) and 6.5 m (21 ft) in diameter, respectively (Blitz 1981:146,158). Both structures had been covered with daub. The Structure 2 daub was not fired. Both structures con-

tained hearths. The Structure 1 hearth was more elaborately constructed of puddled clay with a raised rim 3 cm high. A radiocarbon assay for Structure 1 in Hectare 500N-400E produced a date of A.D. 1070 (880±125 radiocarbon years, Blitz 1981:158). Structure 2 in Hectare 400N-300E dated to A.D. 1190 (760±80 radiocarbon years, Blitz 1981:149). Structure 4, a possible third village structure in Hectare 400N-300E (Blitz 1981: 149, 151), consisted of four post holes covered with a layer of daub and was located 2 m north of Structure 2 in the same hectare. It could possibly represent an outbuilding associated with Structure 2 (Blitz 1981:151).

Six structures dating to the Summerville I phase were found in the premound zone of Site 1Pi85, the Summerville Mound. The earliest structures built within the premound zone were Structures 3 and 4. Structure 4, was the earliest and was the only circular structure built at Site 1Pi85. This circular pattern of individually set posts was 3.5 m (11.5 ft) in diameter. Although grog tempered sherds in the premound level indicate that this structure could possibly date to the Miller III phase, a date of 980±80 radiocarbon years (Blitz 1981:208, 210) from an associated smudge pit (Pit 13) indicates the structure most likely dates to the Summerville I phase. If this smudge pit does date to the Miller III phase it contains more corn than all previously excavated Miller III pits combined and would be the first Miller III smudge pit ever found. The remaining structures of the premound zone were square or rectangular. Structure 3 was the next structure to be built. This was a rectangular, single set post structure 6.50 m (21 ft) by 4.00 m (13 ft). This structure had a prepared fired clay floor 5 cm (1.95 in) to 10 cm (3.9 in) thick (Blitz 1981:204).

The remaining four structures seem to have been constructed in pairs. Structures 2 and 5A were the next constructions within the Summerville mound precinct. These are the only known structures within the Lubbub Creek Archaeological Locality in which wall trench support construction was used exclusively. Structure 2 was 8 m (26.2 ft) square and constructed with four nonconvergent wall trenches with a central puddled clay raised rim hearth. Structure 5A was a double room construction composed of six wall trenches. The larger room was 7 m (23 ft) square. The smaller room measured 5 m (16.4 ft) by 4 m (13.1 ft) and was open on the short side. It also contained a poorly preserved central hearth.

The latest intact structures within the mound precinct, Structures 1 and 5B, were intrusive into the earlier structures. Structure 1 was 8 m (26.2 ft) square and of single set post construction. It had a centrally located puddled clay raised rim hearth. Two wall trenches 2 m (6.6 ft) long supported the posts for an entrance. Between the two wall trenches was a packed clay walkway. Structure 5B was superimposed over Structure 5A and was of similar size and orientation. This structure was different from Structure 5A in that it was constructed of single set posts. This structure also consisted of a large room and a smaller room. The larger room measured 7.4 m (24.3 ft) by 6.7 m (23 ft). In the center was a baked clay platform 1.3 m (4.3 ft) by 0.85 m (2.8 ft) by 18 cm (7 in) high. The smaller room measured 6.7 m (23 ft) by 4.8 m (15.7 ft) by 5.5 m (18.0 ft). Inside this room were two more baked clay platforms. The larger was circular 2 m (6.6 ft) in diameter and 20 cm (7.9 in) high. The smaller was a low rectangle 1.4 m (4.6 ft) by 0.50 m (1.6 ft) and 8 cm (3 in)

high. Enclosing the premound precinct was a curtain wall approximately 25 m (82 ft) square constructed of single set posts. All structures were consistently oriented with one another and with the curtain wall in a general east to west configuration (Blitz 1981:168-223).

Another Summerville I structure was found within the cemetery area of Site 1Pi33, one of the sites included within the Lubbub Creek Archaeological Locality (Jenkins and Ensor 1981). Structure 2, a 4.1 by 3.9 m (13.5 by 12.8 ft) oval structure of single set post construction, enclosed Burials 20, 28, and 36 (Jenkins and Ensor 1981, Table 11). Ceramic evidence indicates that these were among the first burials interred in the planned Summerville I cemetery.

Settlement Patterns

A new and distinctive settlement system appeared in the central Tombigbee drainage along with the introduction or development of the Mississippian culture-type in this region. This settlement system reflects an efficient corn agriculture subsistence base with secondary emphasis on hunting and gathering. This settlement system can best be characterized as the "Simple Nuclear Centered" type defined by Beardsley et al. (1956):

> . . . a permanent center, with or without satellites. The center may be a self-supporting town, or a market or a ceremonial place that serves as a focus for surrounding villages or hamlets. The center is not strikingly differentiated in content from its satellites except when its character is primarily ceremonial (Beardsley et al. 1956:141).

During the Mississippian stage, several permanent centers were located between the Lyons Bluff site and the Lubbub Creek Archaeological Locality. These mound sites often are associated with villages. Excavation data are not available for most of these and it is not known how many were occupied during the early Mississippian period. The Lyons Bluff site and the Lubbub Creek Archaeological Locality were occupied at this time. Both locations were situated within sharp bends of a creek or river. Excavation data are most complete from the Lubbub Creek area. The Lubbub Creek site complex includes a premound precinct with public buildings enclosed within a stockaded rectangular plaza, a village area, and a cemetery for the elite. The community was protected by a palisade constructed across the neck of the bend (Jenkins and Ensor 1981, Cole and Albright 1981).

Although 31 smaller Mississippian components are known within the Gainesville Lake area, few can definitely be assigned to the Summerville I phase. Most of the site collections are small and contain few diagnostic artifacts. These sites have previously been divided into two types, farmsteads and transitory camps, based primarily on site size. These categorizations are probably not very meaningful, however, since most were made from surface collections (Jenkins et al. 1975:194-197). No examples of Summerville I farmsteads or hunting camps have been excavated.

Ceremonialism

Two characteristics of Mississippian society which distinguish it from earlier social configurations are the development of institutionalized offices and the development of marked inequalities among descent groups. These two aspects of social organization, which are among the markers of the "chiefdom" or "ranked" evolutionary stage (Service 1971), are typically sanctified or legitimized ways which generate classes of material culture with appropriate symbolic content. These turn up archaeologically in certain ceremonial contexts, particuarly in mortuary ritual. The Summerville I mortuary data from the Gainesville Lake excavations can be used to support the proposition that both institutionalized offices and regularized descent group ranking had emerged by A.D. 1200 in the central Tombigbee region.

These data on Summerville I mortuary ceremonialism, including modes and orientations of burial, spatial clustering, and grave associations, are treated extensively in Appendix 3 to this volume by Cole, Hill, and Ensor. The best evidence for descent group ranking during this phase is from Site 1Pi33, where the burials within a single discrete cemetery could be distinguished by attributes of location, burial position, and orientation from a larger undifferentiated group of contemporaneous burials elsewhere at the site. If we are allowed the assumption that this mortuary facility is a manifestation of the corporate aspect of a unilineal descent group, which seems likely, then the distribution of prestige-laden grave goods at Site 1Pi33 should be informative on social inequality. The analysis shows unambiguous evidence of such inequality: not only are "two distinct dimensions of social personae" (Peebles and Kus 1977) demonstrable, but remarkably, such rare and imported manufactured items as repousse and plain copper plaques and pendants, copper coated ear spools, cylindrical marine shell columella beads, whelk dippers, galena cubes, and drilled freshwater pearls are limited exclusively to burials within the circumscribed mortuary facility at Site 1Pi33. It is noteworthy that these presumed indicators of prestige and high status do not closely match the characteristic artifact groups which Peebles (Peebles and Kus 1977) associated with members of the superordinate social dimension at Moundville.

Distinguishable from these status conveying materials, which reflect the inferred ability of one social group to control the manipulation and distribution of certain scarce resources, are icons which symbolize not membership within one or another descent group but instead membership in such discrete offices of leadership as the chieftainship and priesthood. These icons are not merely scarce manufactured goods, but additionally incorporate evidence of the control of sacred ideology and symbolism. Included in this category are items traditionally included in the "Southeastern Ceremonial Complex" or "Southern Cult" (Waring and Holder 1945), and also such manifestly symbolic religious public works as platform mounds.

Examples of representative art were limited to a single multiple male burial (Burial 20) within the mortuary facility at Site 1Pi33. The most striking artifact is a repousse copper plaque portraying a realistic spotted falcon with the wings spread slightly to conform to the shape of the plate (Fig 22). This falcon plate has its closest counterparts at the

Etowah site (Byers 1962: Fig. 10, 11), and with the "open wing hawk plate" from the Spiro site (Hamilton et al. 1974:82, Fig. 48). Stylistically this plate falls squarely within the repousse copper style group that Phillips and Brown (1978:187-192) have called "classic Etowah."

Two other examples of repousse copper were found with Burial 20 (Fig. 22). These were two decorated arrowhead-shaped copper cutouts, or "symbol badges," included within a cache of 12 similar artifacts which were otherwise undecorated. "Symbol badges" of this shape have been encountered at such sites as Etowah (Moorehead 1932, Larson 1959, Byers 1962: Figs. 66, 67), Moundville (Moore 1905a: Fig. 104), Charlotte Thompsen (Moore 1900: Fig. 49), 30-Acre Field (Moore 1900: Figs. 66, 67), Koger's Island (Webb and DeJarnette 1942: Pl. 253), and Cemochechobee (Schnell et al. 1981), all in Georgia and Alabama.

One of the two embossed copper arrowhead cutouts from Site 1Pi33 bears a design consisting of an offset eye and central ridge, similar but not identical to certain specimens from Moundville, Kogers Island, and Cemochechobee. The design is well executed, having an Etowah-like diamond shaped eye, a broad semicircular eye surround, and a single central ridge. The other arrowhead has been cut from the face area of a "hawk dancer" repousse plate closely resembling the two "Rogan" plates from Mound C at the Etowah site (Phillips and Brown 1978:188-189).

Both Brown (1971) and Peebles and Kus (1977) have attempted to identify chiefly offices at the pinnacle of the status grading systems at Spiro and Moundville, respectively. In each case they have provisionally identified from the mortuary data markers or emblems of chiefly status. It is not unreasonable to suspect that repousse copper was similarly employed as an accompaniment of warrior-chief offices in the Summerville I phase.

Knight (1981) has argued that Mississippian platform mounds have an important iconic aspect in addition to their use as substructures and mortuary facilities, serving as public symbols associated with cult institutions governing periodic rites of intensification. In the central Tombigbee Valley, platform mounds first appear in the Summerville I phase, the best documented example being the substructure mound at Site 1Pi85 within the Lubbub Creek Archaeological Locality site complex.

It seems clear from these data that the two major features of Mississippian ceremonialism, the use of Southern Cult paraphernalia to legitimize and sanctity chiefly status, and the employment of platform mound ceremonialism as an aspect of periodic public rites of renewal, were concurrently introduced and played important roles in the early Mississippian Summerville I culture.

The Southeastern Ceremonial Complex warfare theme is present in the ritual paraphernalia of Burials 20B and 20C at Site 1Pi33. These burials were included among other Summerville I-III interments that apparently represent a spatially exclusive elite cemetery. The two primary burials were extended on their backs, placed one on top of the other, and oriented in an east to west direction. Both individuals were in their mid-to-late

thirties. The individual represented by Burial 20B had apparently been killed by a triangular projectile point found in the right side of the chest. Associated with Burials 20B and 20C were the articulated remains of two partial burials. Burial 20A was a primary interment of right and left arms and lower legs, placed over the legs of Burials 20B and 20C. Burial 20D was the left and right feet of the same or another individual placed over the lower legs of Burials 20B and 20C. The articulation of the partial Burials 20A and 20D indicate that the limbs and feet were buried in the flesh and had been either recently cut from individuals or mummified or dried. They are interpreted as war trophies. The computed stature of Burials 20A and 20B was taller than the remaining burials in the cemetery (Hill 1981:229, 278-280). All of the males in this cemetery were exceptionally robust (M.C. Hill, personal communication 1982). The Southeastern Ceremonial Complex paraphernalia associated with these burials included a square copper plate embossed with a falcon (Fig. 22) and 12 copper artifacts resembling stemmed projectile points or pendants. Larson (1959) suggests that these artifacts be called symbol badges and discusses their distribution. The significance of these copper artifacts is further discussed in Appendix 3. The latter may have been cut from earlier plates since two illustrate fragmentary motifs (Fig. 22, Ensor 1981a:237). Three-fourths of a Moundville Incised var. Moundville vessel, diagnostic of the Summerville I phase was also associated with Burial 20.

Burials 20B and 20C are interpreted as elite members of a warrior class from their burial associations and from their large stature. Such military personnel must have been necessary for the maintenance and protection of southeastern chiefdoms as evidenced by their presence at other southeastern mound centers. Such individuals have usually been recovered at the centers such as Moundville, Etowah, and Spiro. Their appearance early during the Mississippian stage at the relatively small Lubbub center may be important to their interpretation here.

Within the central Tombigbee drainage the Woodland to Mississippian chronology has been well documented (Jenkins 1981, Mann 1981, Peebles and Mann 1981). It is now fairly clear that the Woodland occupations overlapped with the Mississippian occupations by at least 100 years. That is, the Gainesville and Cofferdam subphases of the Woodland stage ended no earlier than A.D. 1100 and the Summerville phase of the Mississippian stage began no later than A.D. 1000. The Mississippian acculturation of the Late Woodland population in the central Tombigbee area may have necessitated an elite Mississippian warrior class. Considering the apparent small size of the Summerville I population relative the to Miller III population, a warrior class may have been necessary for the survival of the Mississippians.

Space, Time, and External Relationships

The Moundville variant is composed of several local phases that have similar content, a similar temporal duration, and that are geographically contiguous. The spatial distribution of this variant is best defined by the distribution of the Moundville ceramic series, composed of the types Mississippi Plain, Bell Plain, Moundville Incised, Carthage Incised, and

Artist's Reconstruction of Copper Plate and Copper Symbol Badges
from Site 1Pi33, Burial 208, Summerville I Phase

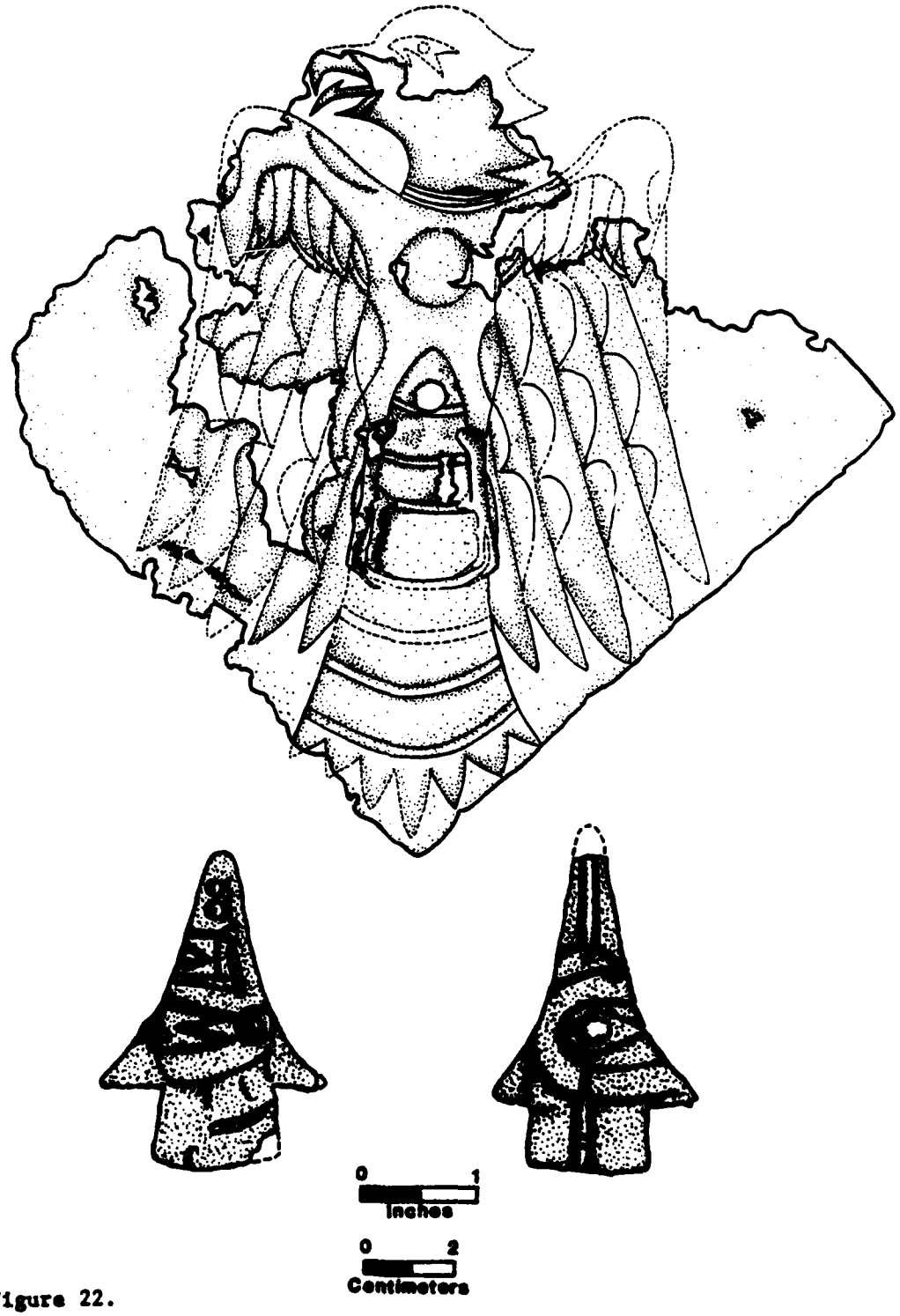


Figure 22.

Moundville Engraved. This variant can also be defined by the common use of the small triangular Madison arrow point, the construction of platform mounds, and a dependence on corn agriculture. The Moundville variant is represented by a number of local phases within the river and larger creek bottoms of eastern Mississippi, western and central Alabama, and the western Tennessee Valley. Within the western Tennessee Valley, Moundville variant sites extend from Shiloh in the west to Hobbs Island in the east. Local sequences of stylistic change can be traced that are comparable to the Warrior drainage Moundville I through III phase sequence defined by Steponaitis (1978, 1980b). The best known and most fully documented Moundville variant sites are located within the western Alabama Warrior River Valley. There the Moundville site and associated mounds represent the most sophisticated manifestation of the Moundville variant (Fig. 20).

The term Moundville phase has been used to identify the central Tombigbee River Valley Mississippian manifestation approximately 30 to 40 miles west of the Warrior Valley (Jenkins 1975a, Jenkins et al. 1975). Recently the Moundville I through III sequence, defined by Steponaitis for the Warrior Valley, has been identified in the central Tombigbee Valley (Jenkins 1981). More recently Peebles (1981) has referred to this sequence as the Summerville phase which he divided into three sequential periods. The Summerville I through III phase terminology is used in this paper to remain consistent with the integrative taxons defined by Willey and Phillips (1958:11-44). Phases are not divided by periods in their taxonomy.

The spatial dimensions of the Summerville I phase are not well defined. It clearly overlaps with the Moundville I phase to the east. Its southern distribution extends no farther than 20 miles south of Demopolis, Alabama (Jenkins 1982). Its western distribution overlaps with the Tibbee Creek phase (Marshall 1977), the earliest phase of a local sequence which documents the development of the Moundville variant within the Tibbee Creek drainage. Tibbee Creek flows into the Tombigbee River near Columbus, Mississippi (Fig. 20). The differences between these phases, separated by approximately 40 miles, are not clear. At the present time it is impossible to determine to which phase sites between Tibbee Creek and the Lubbub Creek Archaeological Locality belong and these two phases may be combined into one taxonomic unit if future research does not support a distinction between them.

To the east, the Summerville I and Moundville I phases are closely related to an undefined Moundville variant early Mississippian phase in the Cahaba River Valley. This author and Cailup Curren briefly visited a mound and village three miles south of the Fall Line, at the mouth of Haysop Creek, which produced ceramics similar to Moundville I ceramics. The site also contained a burial urn component (Figs. 19 and 20).

The Summerville I phase has been dated by a series of radiocarbon dates from A.D. 1000 to A.D. 1200 (Peebles 1981).

MIDDLE MISSISSIPPIAN PERIOD
(A.D. 1200 - A.D. 1540)

Summerville II-III Phases

The Summerville II-III phases represent the local manifestation of the middle or mature Mississippian period. The Summerville II-III phases equate temporally with the Warrior drainage Moundville II-III phases. At the Lubbub Creek Archaeological Locality, however, a clear distinction between Summerville II and III based on stylistic change in ceramics could not be made primarily because of the intensive successive occupations which resulted in a mixing of the earlier assemblages with later contexts. "The two part designation, II-III, was given in the hope that it could be further subdivided in the future (Peebles and Mann 1981:63)."

Content

Ceramics

The basic ceramic technology which first appeared during the Summerville I phase continues through the Summerville II-III phases with some modifications. The major varieties continued to be Mississippi Plain var. Warrior and Bell Plain var. Hale. During the Summerville II-III phases, the number of strap handles on Mississippi Plain var. Warrior vessels increased from two to four. By the end of Summerville III times, handles increased in number to six, eight, or more and Alabama River Applique appeared for the first time as an extreme minority. This type was distinctive of the later Summerville IV phase. During the Summerville II-III phases there were also changes in the vessel form of Bell Plain var. Hale. The ovoid pedestalled bottle was completely replaced by a wider body form with a shorter pedestalled base (Moore 1905a: Figs. 35, 37, 39, 53) or a slab base (Moore 1905a: Fig. 8). By the end of Summerville III times, the pedestalled and slab bases had disappeared. The beaded or filleted rim appeared for the first time during the Summerville II phase. Moundville Incised var. Moundville disappeared and var. Carrollton became the dominant decorated variety during the Moundville II-III phases. Decorated fine ware ceramics such as Carthage Incised var. Moon Lake continued to be made and vars. Carthage and Fosters appeared for the first time. The decorated fine wares, however, constitute a minority.

Lithics

There is little evidence for change in lithic technology during the Mississippian stage. The discussion offered for Summerville I lithics applies to the Summerville II-III phases.

Subsistence

Subsistence strategies during the Summerville II-III phases appear to have been very similar to those of the Summerville I phase. Maize was the

dominant plant food, comprising over 95 percent of all plant remains. Nuts provided only 3 percent of the plant food remains by count. At the Lubbub Creek Archaeological Locality, Pit 26 in Hectare 400N-300E contained the majority of the corn remains from this phase. Hickory nuts accounted for over 95 percent of the total nut remains and acorns comprised almost 5 percent. Walnuts and beechnuts were sparse. Passionflower, Chenopodium, sedge, maygrass, sage seeds, and nine common beans (Phaseolus vulgaris) were also identified from Pit 26 (Caddell 1981b:206, 213-214, 238).

Faunal procurement practices during the Summerville II-III phases appear to have remained unchanged from the preceeding Summerville I phase. Mammals comprised almost 90 percent of the identified bone by weight. Deer were by far the most numerous. Birds comprised 6 or 7 percent and turtles comprised 4 to 5 percent of the bone by weight (Scott 1981: 339-342).

House Forms

Houses dating to the Summerville II-III phases have been found at three locations along the central Tombigbee River; the Lubbub Creek Archaeological Locality (Blitz and Peebles 1981), the Tibbee Creek site (O'Hear et al. 1981), and the Kellogg Village site (Atkinson et al. 1980).

The largest sample of Summerville II-III houses was recovered at the Lubbub Creek Archaeological Locality where the Summerville II-III occupations formed compact communities outside the stockaded plaza surrounding the Summerville mound, Site 1Pi85. These communities were more compact and were not palisaded like the earlier Summerville I community. The community was, at least during the earlier part of this period, still separated from the mound precinct and plaza by a stockade (Cole and Albright 1981). A total of six houses was excavated by The University of Michigan (Blitz and Peebles 1981:281-310) and one house was excavated by The University of Alabama at Site 1Pi33 (Jenkins and Ensor 1981:84, Table 10).

Three general types of Summerville II-III houses have been recorded. Structure 1 in Hectare 400N-400E and Structures 6 and 7 in Hectare 400N -300E, excavated by The University of Michigan, were oval structures of individually set posts measuring between 7.5 m (24.6 ft) and 9.9 m (32.5 ft) in maximum dimension. Two of these structures had been plastered with daub. Structure 1 at Site 1Pi33, excavated by The University of Alabama, differed slightly from the previous three. It also was of individual post construction, oval, daubed, and measured 5.5 m (19 ft) in maximum dimension. Unlike the other structures, Structure 1 at Site 1Pi33 had an interior circle of large support posts and an exterior circle of much smaller support posts with a well defined hearth in the center.

The second type of structure recovered at the Lubbub Creek Archaeological Locality was represented by two rectangular to subrectangular houses of individual single set post construction. Structure 4 in Hectare 400N-400E and Structure 8 in Hectare 400N-300E measured from 7.5 m (24.6 ft) to 8 m (26.2 ft) in length. Neither house had been daubed. Both structures had entrances of wall trench construction.

The third type of structure dating to the Summerville II-III phases at the Lubbub Creek Archaeological Locality was represented by an oval structure with a semisubterranean floor, Structure 3 in Hectare 400N-400E. Eight posts penetrating the floor showed no obvious alignment. A probable hearth was located in the center (Blitz and Peebles 1981:298).

Structure I from the Tibbee Creek site probably dates to the Summerville II-III phases or to the contemporaneous Lyons Bluff phase defined by (Marshall 1977:56-57). This was a two room house of wall trench construction. The entire structure was approximately 15.5 m (50.9 ft) long and 6.5 m (21.3 ft) wide. The southern end of the south room was not closed by a wall trench, but appears to have been walled off by a line of posts (O'Hear et al. 1981: Fig. 15).

Two structures from the Kellogg Village site probably date to the Mississippian stage. Post holes from both structures contained shell tempered pottery. Both structures may also date to the early Summerville II phase. Virtually all of the Moundville Incised pottery at that site is var. Carrollton and Blakeman found a large Moundville Incised var. Moundville sherd in a post hole which yielded a date of A.D. 1195±70 (Blakeman 1975:96, 177; Atkinson et al. 1980:196). Another radiocarbon date of A.D. 1185±90 would also support an early Summerville II date (Atkinson et al. 1980:233, 237). Structures 1 and 2 discovered by Atkinson were oval, of single set post construction, and apparently were not daubed. These structures measured 2.8 m (9.2 ft) and 5.5 m (18.0 ft) in their maximum dimension. Structure 1 contained a probable hearth. Structure 2 contained three Mississippian burials. A third partial structure at the Kellogg Village site could not be definitely assigned to any cultural affiliation.

Settlement Patterns

The Summerville II-III phase site distribution pattern appears to be a continuation of the Summerville I simple nuclear centered type (Beardsley et al. 1956). The Summerville II-III villages at the Lubbub Creek Archaeological Locality consisted of compact communities clustered around the plaza on the eastern side of the Summerville Mound. The Summerville community was not fortified (Blitz and Peebles 1981:281-310) and Summerville II-III houses were built over the earlier Summerville I stockade which had enclosed the plaza (Cole and Albright 1981). A generally similar mound and village organization was present at the Lyons Bluff site at this time (Dick Marshall, personal communication 1981). Other contemporary mound sites include the Butler Mound, the two Chowder Springs Mounds, and the Coleman Mound. All of these are located between the Lyons Bluff site and the Lubbub Creek Archaeological Locality.

One probable example of a farmstead occupied during the Summerville II-III phases was exavated at Site 1Gr2 (Jenkins 1975a:56-152, Jenkins and Ensor 1981:19-30). Other examples of farmsteads occupied during the middle Mississippian period may include the Tibbee Creek site (O'Hear et al. 1981) and the Kellogg Village site (Atkinson et al. 1980). The extensive cemetery at the Kellogg Village site, however, may indicate an occupation larger than a farmstead at that locality. It may represent a cemetery for a larger nearby Mississippian settlement, or there may have

been a larger Mississippian habitation such as a hamlet at the Kellogg Village site which was not uncovered during the limited amount of time allotted for the excavation of that site.

Ceremonialism

Little evidence of the Southeastern Ceremonial Complex was recovered by University of Alabama excavations at the Lubbub Creek Archaeological Locality that are datable to the Summerville II-III phases. Most burials in the cemetery at Site 1Pi33 date to the Summerville I phase. The levels of the Summerville Mound that dated to the Summerville II-III phases had been bulldozed. Thus there is little evidence for ceremonialism during the Summerville II-III phases at Lubbub Creek. One of the more interesting artifacts dating to this time period is a terraced rectangular vessel associated with Burial 6 in Hectare 400N-400E (Blitz and Peebles 1981: 303, Mann 1981: Figure 41). Although the probable ceremonial significance of this vessel is not understood, it is similar to other vessels found in the southeastern United States. One terraced vessel was reported from the Big Black River Valley in Mississippi (Ford 1936: Fig. 23) and four have been recorded from the Moundville site (Steponaitis 1980b: Fig. 63).

Space, Time, and External Relationships

The Summerville II-III phases represent the local expression of the later part of the Moundville variant (Fig. 19). Like the earlier Summerville I phase, the spatial range of the Summerville II-III phases extends just south of Demopolis, Alabama (Fig. 20). These phases clearly overlap, however, with the Moundville II and III phases to the east in the Warrior Valley and to the west and north with the Lyons Bluff phase defined by Marshall (1977:56-57). The content of these Moundville phases is so similar that it is difficult to determine where the artifact assemblage of one ends and the other begins. The southern range of the Summerville II-III phases includes Site 1Gr2, where a farmstead and cemetery have been excavated (Figs. 2 and 4).

Another phase, closely related to the Summerville II-III phases, is located in the middle Tennessee Valley where the Kogers Island phase is centered around the Kogers Island, Perry, Little Bear Creek, McKelvey, and Seven Mile Island sites (Webb and DeJarnette 1942, 1948) as well as the Florence Mound site (Walthall 1980: 228-236).

The temporal position of the Summerville II-III phases is documented by a series of radiocarbon dates from the central Tombigbee Valley. The major Mississippian component at the Kellogg Village site appears to date to the early Summerville II subphase. The most numerous incised pottery type at that site is Moundville Incised var. Carrollton. Only one var. Moundville sherd was recovered from a post hole at that site which yielded a date of A.D. 1195±76 (Blakeman 1975:96, 177; Atkinson et al. 1980:196, 233, 237). Another date on the Mississippian component at Kellogg yielded a date of A.D. 1185±90 (Atkinson et al. 1980:233, 237). Other dates on the Summerville II-III phases have been obtained from the Lubbub Creek Archaeological Locality. Pit 0 in Hectare 400N-300E yielded a date of

A.D. 1290±80 (Blitz and Peebles 1981:281). Structure 1, at Site 1Pi33 excavated by The University of Alabama, dated to the Summerville III phase and yielded a date of A.D. 1410±45 (Jenkins 1981:34, Table 1, Appendix B, Table 25). From these dates it is estimated that the Summerville II-III phases dated from A.D. 1200 to approximately A.D. 1550.

Chapter VII

ARCHAEOLOGY OF THE GAINESVILLE LAKE AREA: SUMMARY AND CONCLUSIONS

The cumulative results of the Gainesville Lake area excavations are summarized in this chapter. The major topics considered for each of the major stages in the previous chapters are here summarized in terms of trends that characterize the prehistory of the central Tombigbee region.

CERAMICS

Several ceramic traditions evolved and coalesced in the Tombigbee Valley, forming the various ceramic complexes discussed in this report.

The Wheeler series, a by-product of Coastal Plain trade and the Gulf tradition, were the earliest ceramics to appear in the central Tombigbee Valley. The term Gulf tradition, as used in this report, is most consistent with Ripley Bullen's (1971, 1972, 1974) use of the term. It differs from Caldwell's (1958) and Sears' (1954) use of the same term. Caldwell and Sears' Gulf tradition included burial mounds and Woodland fabric and cord marked ceramics in addition to the ceramic styles which had their longest duration within the Gulf Coastal Plain. In this report, the term has been confined to a ceramic tradition. The decorations characteristic of the Gulf tradition include both rectilinear and curvilinear incising, punctation, fingernail pinching, and rocker and dentate shell stamping. The Gulf tradition dominated the central Tombigbee River Valley ceramic inventories until approximately 100 B.C. or A.D. 1 when Middle Eastern and Northern tradition fabric marked and cord marked pottery were introduced. The origins of these traditions are found to the north and east, where they occur earlier. These traditions may have entered the Tombigbee and Mississippi drainages via the Mississippi North Central Hills from the general region of the Pinson Mounds site in west central Tennessee. The Northern and Middle Eastern ceramic traditions dominated central Tombigbee ceramic inventories until approximately A.D. 1100. Throughout this period, however, the Gulf tradition remained an important part of the ceramic complexes of the lower Tombigbee and Gulf Coast regions.

Mississippian ceramics first appeared in the Tombigbee Valley at around A.D. 1000 in the form of the Moundville series. It was postulated in this report that the initial appearance of these ceramics was not a product of local development. Current evidence suggests that early Moundville ceramics were introduced as a fully developed shell tempered complex. After this shell tempered ceramic complex was introduced the local grog tempered cord marked and plain pottery eventually ceased to be made and Moundville ceramics developed locally into a consecutive series of definable complexes.

Several Mississippian ceramic attributes may have their initial origin in the Gulf tradition, but these may have first coalesced in an early Mississippian complex in the middle Mississippi Valley. Like most Gulf tradition ceramic series, most Mississippian ceramic series are comprised of 80 to 90 percent plain pottery, especially west of the Chat-

tahoochee River. Rectilinear incised and pinched styles such as Barton Incised and Parkin Punctated are very old decorative styles that appeared early in the Gulf tradition. Many new vessel forms and decorations, however, also appeared that are distinctively Mississippian.

By approximately A.D. 1550 the Moundville series had evolved into the Alabama River series. There are clear ceramic continuities from Moundville III or Summerville III to the Alabama River series. Basic changes include the virtual disappearance of engraving, less emphasis on the coarse ware and fine ware dichotomy, and the addition of the applique rim mode and vertical incising from the lip. The last two attributes could be considered protohistoric horizon style markers for a geographical area extending in an arc from southeast Missouri through east central Mississippi into central Alabama.

LITHICS

Projectile points during the Gulf Formational stage trended toward larger stemmed forms. During the Middle Gulf Formational period, the Wade var. Wade and Cotaco Creek var. Cotaco Creek projectile point types were predominant and are found in association with the fiber tempered Wheeler series ceramics.

Var. Cotaco Creek appears to have developed directly into the Flint Creek var. Flint Creek projectile point type, the primary type found in association with Alexander ceramics. Nonlocal raw materials such as Fort Payne chert and Tallahatta quartzite were frequently used. Local lithic raw materials were also used and were infrequently heat treated.

In the succeeding Woodland stage, stemmed projectile points remained the dominant style during the Middle Woodland period, but the stemmed projectile points of this period did tend to be slightly smaller. The use of exotic cherts was rare during this time. Local yellow river cobbles were the most frequently used form of chert. These cobbles were occasionally heat treated to a dull pink or red in order to improve flaking quality.

During the Late Woodland period, ca. A.D. 600, a new projectile point style, the small triangular form, appeared abruptly. This form was probably introduced. Its local development is not apparent in the earlier data. The technology involved in the manufacture of this form does, however, reflect a more intensive adaptation to the local lithic resources. Yellow chert cobbles were gathered from gravel bars in the river, taken to the site, and heat treated. After treatment, the desired heat spalls were selected. The remaining fire cracked chert was discarded and large amounts of fire cracked red chert are characteristic of Miller III middens.

The small triangular projectile point continued to be the dominant form during the Mississippian stage. The heat treatment technology developed earlier for their manufacture also continued.

SUBSISTENCE AND SETTLEMENT PATTERNS

Throughout most of Tombigbee River Valley prehistory, basic subsistence techniques revolved around the procurement of deer and nut foods. There were, however, minor evolutionary changes within this basic technology and corn was introduced during the late prehistoric period.

Very limited data suggests that subsistence during the Gulf Formational stage was centered around deer and hickory nuts. Shellfish were also procured, but only to a very limited extent. Other animal and plant resources were probably also exploited. The excavated Wheeler and Alexander components, however, are small and contained only a very limited amount of floral and faunal remains in primary contexts.

The small Wheeler and Alexander components in the river valley probably prepresent transitory food procurement camps occupied during the fall months. No food storage facilities have been found at any of the excavated components. These sites are a stark contrast to the few larger components located in the prairie to the west and the Fall Line Hills to the east. These sites may represent base camps occupied by larger groups for longer periods of time. The prairie was a rich environment during the fall months where deer, turkey, and squirrel would have congregated to exploit the acorn masts. Oaks are the dominant species in the prairie and are concentrated along creeks and intermittent streams.

Deer and hickory nuts remained the basic food staple throughout the following Woodland stage. There is much more complete data for this interval and several changes have been documented. Although deer and hickory nuts continued as the core of the subsistence base, there was a major change in settlement patterns during the Middle Woodland Miller I phase. Base camps appear more frequently in the river valley at this time. These sites contrast with the preceeding transitory camps of the Gulf Formational stage in that they have midden accumulation and storage facilities, indicating that the occupation at these sites was at least semipermanent. Vertebrate and invertebrate river species were exploited to a limited extent as well as a narrow spectrum of smaller mammals. Smaller Middle Woodland sites found both on and above the floodplain, although unexcavated, probably represent short term food procurement stations. Throughout the Middle Woodland period there was an increase in population reflected by more and larger base camps.

During the Late Woodland period, the number and size of sites increased dramatically. The catalyst for this increase may have been the introduction of a small amount of corn. Corn was not a major dietary staple. It appeared only infrequently in floated samples from Miller III features. It does appear to have been dependable enough, however, to support a substantial increase in the Miller III population. This larger population relied heavily, as in the past, on deer and between A.D. 700 and A.D. 1000 the deer population decreased progressively as a result of increased deer exploitation. Late Woodland groups relied increasingly on second line resources. The relative percentages of smaller mammals, turtles, fish, and birds increased as deer decreased in faunal inventories. The most dramatic change in faunal procurement is reflected by an over 300 percent increase in shellfish between Late Miller II and Late

Miller III times. Miller III base camps are essentially shell middens in the central Tombigbee region. By A.D. 1100 the central Tombigbee Valley had reached its maximum human carrying capacity at the Woodland level of technology. Population pressure is reflected not only in the faunal assemblages but also by human osteological remains. These indicate a high incidence of violence and nutritional stress during the Miller III phase.

At approximately A.D. 1000, the Mississippian occupation at Lubbub Creek was probably the first Mississippian occupation in the Gainesville Lake area. The Lubbub Creek site complex remained the dominant Mississippian center within the Gainesville Lake area for the next 500 years.

With the appearance of Mississippian groups at approximately A.D. 1000, a new and distinctive settlement pattern was introduced into the Tombigbee drainage possibly along with a more efficient type of corn. This settlement system, characterized as the simple nuclear centered type, has a permanent center which serves as a focus for surrounding villages or farmsteads. In this case the permanent center was the Summerville Mound and palisaded village at Lubbub Creek. A number of farmsteads were located up and down the river from Lubbub Creek.

The procurement of deer and hickory nuts continued as important subsistence strategies throughout the Mississippian stage, but corn was the dominant staple.

During the suceeding protohistoric period, the settlement system was very similar to the preceeding Mississippian system. The Lubbub Creek site complex continued to be the largest population center in the area and farmsteads were located along the river nearby. Subsistence strategies seem to have remained similar. The use of acorns may have increased substantially, however.

HOUSE FORMS

Approximately 45 structures have been defined within the Tombigbee drainage during the past 40 years of periodic excavations. From these data, fairly discernable evolutionary trends in house shape and size are evident.

The earliest recognized structures, date to the Miller I Bynum or Pharr subphase. At the Bynum site seven large oval structures ranging from 10.67 m (35 ft) to 23.77 m (78 ft) were defined. These are the largest structures known from the Tombigbee drainage.

The recognized houses dating the to the Miller II phase are the same shape, but are smaller than the Miller I houses. Four early Miller II Tupelo subphase houses at the Miller site were only about 6 m (20 ft) in diameter and one late Miller II Turkey Paw subphase structure at Site 1Gr1X1 measured 11.0 m by 8.8 m (36 ft by 29 ft).

Early Miller III Vienna subphase house shapes are essentially the same as those of the Turkey Paw subphase, but they are smaller. One complete early Miller III structure from the Tibbee Creek site measured 5 m (16.40 ft) in diameter.

One unusual possible structure dating to the Catfish Bend subphase was recognized at Site 1Pi61. This was an oval semisubterranean structure approximately 3 m (10 ft) in diameter.

The latest known Miller III houses dating to the Gainesville subphase, A.D. 1000 - A.D. 1100, are probably copies of an early Mississippian form widespread at approximately A.D. 1000. Four structures were excavated at Site 1Pi61. These structures were rectangular in outline with depressed or slightly semisubterranean floors. Small posts were situated around the interior wall. One structure had been rebuilt, with wall trenches paralleling the long axis. The smallest of these structures measured 3.0 m by 1.8 m (10 ft by 6 ft) and the largest measured 4.6 m by 3.4 m (15 ft by 11 ft). A portion of a similar, but much larger structure dating to the Moundville I phase has been excavated by The University of Michigan at Moundville (Margaret Scarry, personal communication 1979).

During the early Mississippian Summerville I phase both circular and square or rectangular houses were constructed. Two oval houses were defined in the Lubbub Creek village area measuring 6.5 m (21 ft) and 7 m (23 ft). One circular structure found in the Summerville Mound precinct measured 3.5 m (11.5 ft). Five square or rectangular structures were also found within the mound. Only one was constructed with wall trenches. The remainder were supported by single set posts (Blitz 1981).

Nine houses which date to the Summerville III-III phases have been excavated at the Lubbub Creek site complex. Oval, rectangular, and subrectangular forms were recorded. Four oval structures of single set posts measured between 5.5 m (19 ft) and 9.9 m (32.5 ft), although most structures measured toward the smaller end of the scale. The rectangular to subrectangular structures were also constructed with single set posts. These structures had a maximum length of 8 m (26.2 ft). One possible oval semisubterranean structure has also been recorded.

One structure from the Tibbee Creek site probably also dates to the Summerville II or III phase. This was a two room structure of wall trench construction. The structure measured 12 m (39.4 ft) by 6 m (19.7 ft).

Five protohistoric Summerville IV structures were excavated at the Lubbub Creek site complex. Although all of these structures appear to have been circular or oval in outline, their poor definition precludes a positive assessment.

Approximately 45 fairly well defined structures with reasonably good temporal evaluations have been defined within the central and upper Tombigbee drainage which span a time frame from about A.D. 1 to approximately A.D. 1500. At the onset of the Woodland stage, a general trend beginning with large circular or oval houses, between 9.1 m and 21.3 m (30 ft and 70 ft) in diameter, evolved toward oval houses not more than 9.1 m (30 ft) in diameter by A.D. 600. House forms remained oval during the Late Woodland period until aproximately A.D. 1000. These houses were smaller, not exceeding 6.0 m (20 ft) in diameter. At A.D. 1000 the first rectangular houses appeared. These structures are smaller, not exceeding 4.6 m (15 ft) in length or 2.4 m (8 ft) in width. These structures have a depressed floor with small posts closely spaced around the perimeter. The replace-

ment of the individual posts along the long axis with wall trenches was the next stage in the evolution of this structure type. The elimination of the depressed floor and the placement of wall trenches around all four sides was the next evolutionary stage. This structure type, along with circular structures, continued throughout Summerville I and II. During Summerville II wall trenches are replaced by single set posts. Square or rectangular structures seem to have virtually disappeared by the Summerville III phase. After this time houses appear to be primarily circular single set post structures not exceeding 6.0 m (20 ft) in diameter.

CEREMONIALISM

No burials with ritual paraphernalia or probable ceremonial structures have been found which would predate 100 B.C. The earliest evidence for ceremonialism in the Tombigbee drainage dates to the Miller I phase. The religious ritual during this time frame is commonly referred to as Hopewellian ceremonialism. Items such as panpipes, reel gorgets, celts, platform pipes, projectile points, and earspools are found in burial mound contexts. These burial mounds may be regarded as the material expressions of prehistoric ritual. Although the religious ideology of Hopewellian ceremonialism cannot be definitely identified (Hall 1979:258-265) suggests that it may have revolved around human and animal fertility as well as the hunt and other food procurement. He further suggests that in order to understand the rise and fall of the Adena-Hopewell mound ceremonialism in eastern United States prehistory, ". . . one might profit by trying to understand cosmologies that closely relate the underworld and the dead to the affairs of the living (Hall 1979:265)." The exact kinds of panregional and local rituals associated with the various kinds of regional Middle Woodland ceremonial structures will probably never be known. Some aspects of Hopewellian ceremonialism, however, may have survived in the Southeastern Ceremonial Complex and the ethnographic record. Recognizing the fragments of these rituals from archaeological contexts, however, is difficult at best.

At least three different types of burial facilities were in use during the Miller I phase: the charnel house, the burial crypt, and the platform. All of these facilities were eventually covered by mounds. Cremation was the most frequent method of body preparation for burial. The more frequent use of the charnel house and cremation may indicate that Miller I ceremonialism was more closely related to Ohio Hopewell ceremonialism than to Illinois Hopewell where the crypt was more common.

Hopewellian-like burial mounds continued to be erected during the Miller II phase. Burial facilities had changed substantially by this time. Burials were usually primary inhumations and cremation was rare. Although no charnel houses are known, the central burial features in Mounds A and B at the Miller site could be classified as crypts. Other burials had been placed on the side of the mounds and covered with earth, thereby increasing the size of the mound. Grave goods, especially nonlocal items, occurred less frequently at this time. In general, Miller II ritual was much less complex and exhibited substantially less wealth than previously.

Ceremonialism seems to have reached a low ebb during the Miller III phase. During the early part of this phase there is little archaeological evidence that the dead received any special treatment. Bodies were usually placed, tightly flexed, in used storage pits and very rarely had associated grave goods. Burial mounds were no longer constructed.

By the later part of the Miller III phase, there is more evidence for ritual behavior. During the Catfish Bend subphase the dead were often buried in cemeteries usually in small shallow graves dug especially for the body. Burial offerings occurred more frequently and usually consisted of freshwater and marine shell beads. At Site 1Pi61 a plaza-like area was present south and tangent to a large central cemetery. During the following Gainesville subphase, cemeteries are present, but they are usually associated with individual houses. Interments were usually in shallow rectangular pits. Burial position was usually semiextended on the back and oriented eastward. Grave goods were similar to those of the preceeding Catfish Bend subphase.

The ceremonialism of the Mississippian stage has been referred to as the Southeastern Ceremonial Complex. This complex is represented archeologically by a vast array of ritual paraphernalia and iconography as well as the temple mound-plaza arrangement. Maize ceremonialism and warfare seem to have been the two main themes of the Southeastern Ceremonial Complex. Both of these themes are probably represented in the Summerville Mound, Site 1Pi85, and in the artifacts associated with some of the burials at Site 1Pi33 at the Lubbub Creek Archaeological Locality.

The normal burial position during the Mississippian stage was fully extended on the back. Orientations were most frequently toward the east. By the end of the Mississippian stage during the Summerville III phase, reburial was common. That is, portions of several primary extended burials, usually long bones or skulls, were disinterred and reburied together in a bundle. Both the disinterred primary burials and the bundle burials were recovered at Site 1Gr2. During the following Summerville IV phase of the protohistoric period, these reburials were frequently placed in urns.

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APPENDIX 1

A SERIATION OF LATE MIDDLE WOODLAND-LATE WOODLAND FEATURES FROM THE GAINESVILLE LAKE AREA

by
Ned J. Jenkins
and
Christopher S. Peebles

INTRODUCTION

The morphological variability of the ceramics from the Gainesville Lake area has been described by Jenkins (1981). The vehicle of this description was a type-variety analytical system first adapted for the Southeast by Philip Phillips (1970). Types were characterized simply by groups of attributes or modes. Varieties were defined by less inclusive groups of attributes or modes. These varieties were defined primarily on the basis of historically sensitive attributes in order to document local ceramic change or evolution. Using type-variety nomenclature, Jenkins (1981) recognized a chronologic development in the ceramic collection analyzed from the Gainesville Lake area. This chronology was formulated from the relative dating of local contexts by reference to the repeated occurrence of types, varieties, and modes that have been dated in adjoining areas. The development of that chronology was aided by the minimal amount of available stratigraphic data. The chronology was then tested and refined radiometrically. The purpose of this seriation was to further test and refine that portion of the chronology dating from the late Miller II Turkey Paw subphase through the terminal Miller III Gainesville subphase.

METHODS

A total of 98 pits containing 19,537 sherds was selected for seriation. These were selected from a larger group of features containing diagnostic Turkey Paw, Vienna Landing, Catfish Bend, Gainesville, and Cofferdam ceramics at Sites 1Gr1X1, 1Gr2, 1Pi33, and 1Pi61. The larger group of 118 features had been selected by Jenkins (1981:Tables 2-11) to illustrate the relative percentages of the ceramic varieties present in each component. The seriation would in fact test the temporal assessments of those features.

Not all ceramic types or varieties defined by Jenkins (1981) were entered into the seriation. With the exception of the two McLeod Check Stamped varieties, each of the varieties seriated comprised at least 3 percent of the ceramics in their respective ware groups. Both McLeod Check Stamped varieties comprised only 1 percent of the total ceramics of the sand tempered ware group. Therefore, varieties that constituted an extreme minority of any ware group were not included in the seriation. A total of 18 ceramic varieties were included in the seriation. In three cases, however, two varieties of one type were combined to form one unit. Both varieties of Wright Check Stamped, Pickwick Complicated Stamped, and

McLeod Check Stamped were combined for the seriation. Consequently 15 units were seriated.

After the features and ceramic varieties to be seriated were chosen, the percentages of all varieties were calculated and printed. From this abundance matrix, independent ratio-scale variables or a matrix of similarity coefficients was generated (Marquardt 1974:64-121, 144-173; 1978: 257-303). This matrix was then seriated by calculating an index of agreement for each pair of units (Robinson 1951). The matrix was seriated into one, two, and three dimensional orders. The two dimensional order was ultimately selected because it seemed to provide the best solution for this set of data. The last step involved printing the raw ceramic percentages in each feature as ordered in the two dimensional solution. These data were then used to construct Figure 1.

RESULTS

Seriation is a descriptive analytic technique, designed to arrange comparable units along a line such that the position of each unit reflects its similarity to other units. Figure 1 clearly reflects such an ordering. The seriation is anchored to absolute time by a series of 9 radiocarbon dates in the far right column. In the far left column the seriation is integrated with Jenkins' (1981) sequence of subphases.

The seriational order of the features is amazingly close to the chronological order of the same features proposed by Jenkins (1981: Table 2-15), thereby supporting the proposed chronological sequence (1981: 22-29). The seriation also suggests a refinement in the suggested sequence (1981:26-29). In a preliminary version of this chronology Jenkins (1980:72) referred to the Cofferdam complex as Middle Miller III. This complex was reasoned to be earlier than the Gainesville subphase complex (A.D. 1000 - A.D. 1100) because it exhibited fewer Mississippian attributes. Subsequent radiocarbon dates, however, indicated that the Cofferdam complex was possibly entirely contemporaneous with the Gainesville complex (1981:22-29). This seriation indicates that the Cofferdam subphase may in fact be later than the Gainesville subphase. In Chapter V, from the radiometric and seriation data, the Cofferdam subphase was interpreted as both contemporaneous with and later than the Gainesville subphase. The Gainesville subphase was interpreted as a Woodland society in the initial stages of acculturation or development toward Mississippianization. Cofferdam is interpreted as a group that rejected the Mississippian lifeway and technology. If this is true, it would be very interesting to see what the Cofferdam subphase had evolved into by A.D. 1400 or A.D. 1500.

Inclusive sherds created one minor problem in the seriation. These are earlier sherds not contemporaneous with the life of a pit that become mixed with later sherds in primary context as a result of prehistoric activity. This may not be a problem if earlier and later components have been previously excavated and the archaeologist can recognize inclusive sherds, but it is a problem if all of the major types and varieties from pit contexts at a multicomponent site are seriated. The presence of inclusive sherds clearly moved some features out of their true position in the seriation. Features 22, 66, and 142 are out of place in the seriation

Seriation of Late Middle Woodland and Late Woodland Cer

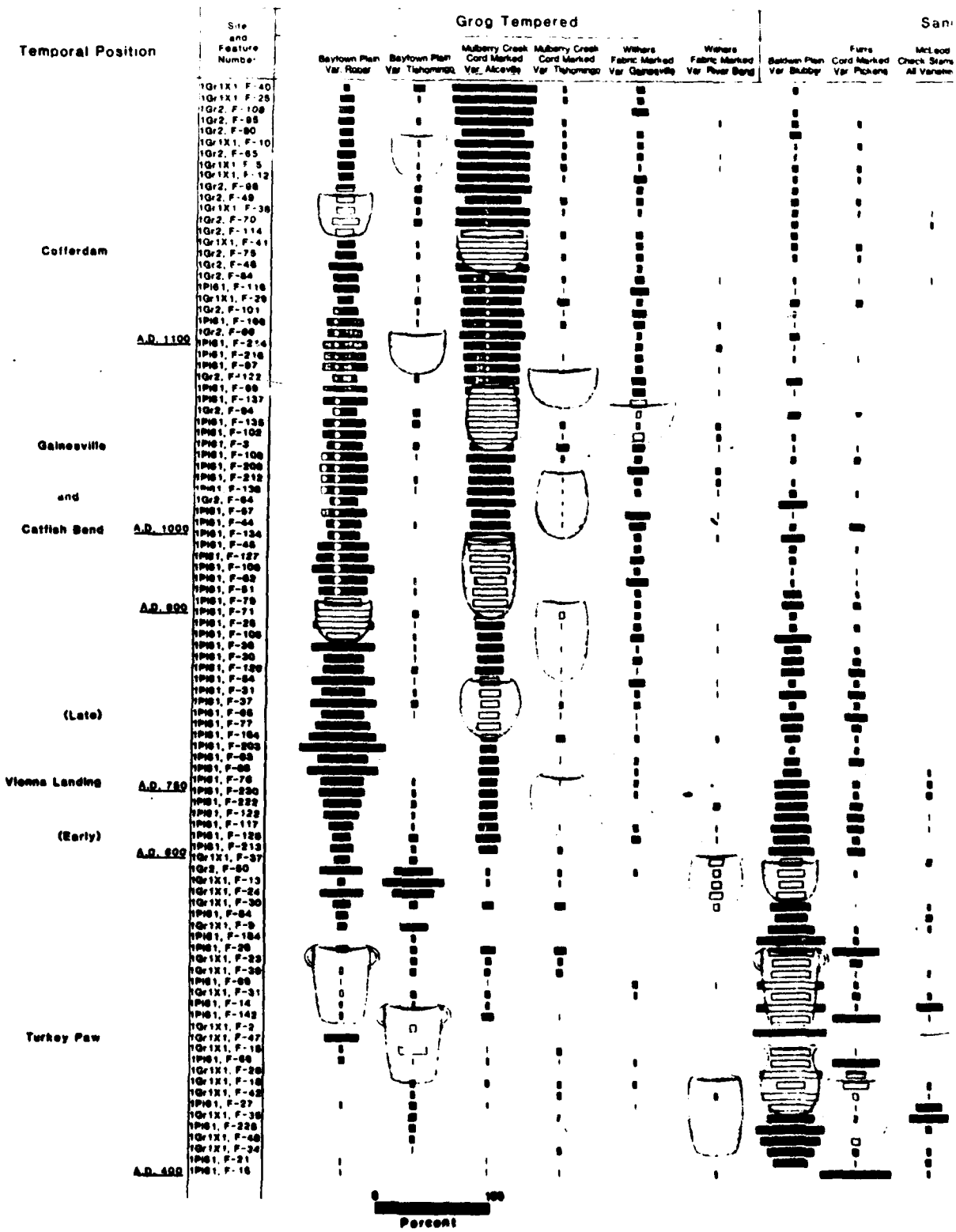
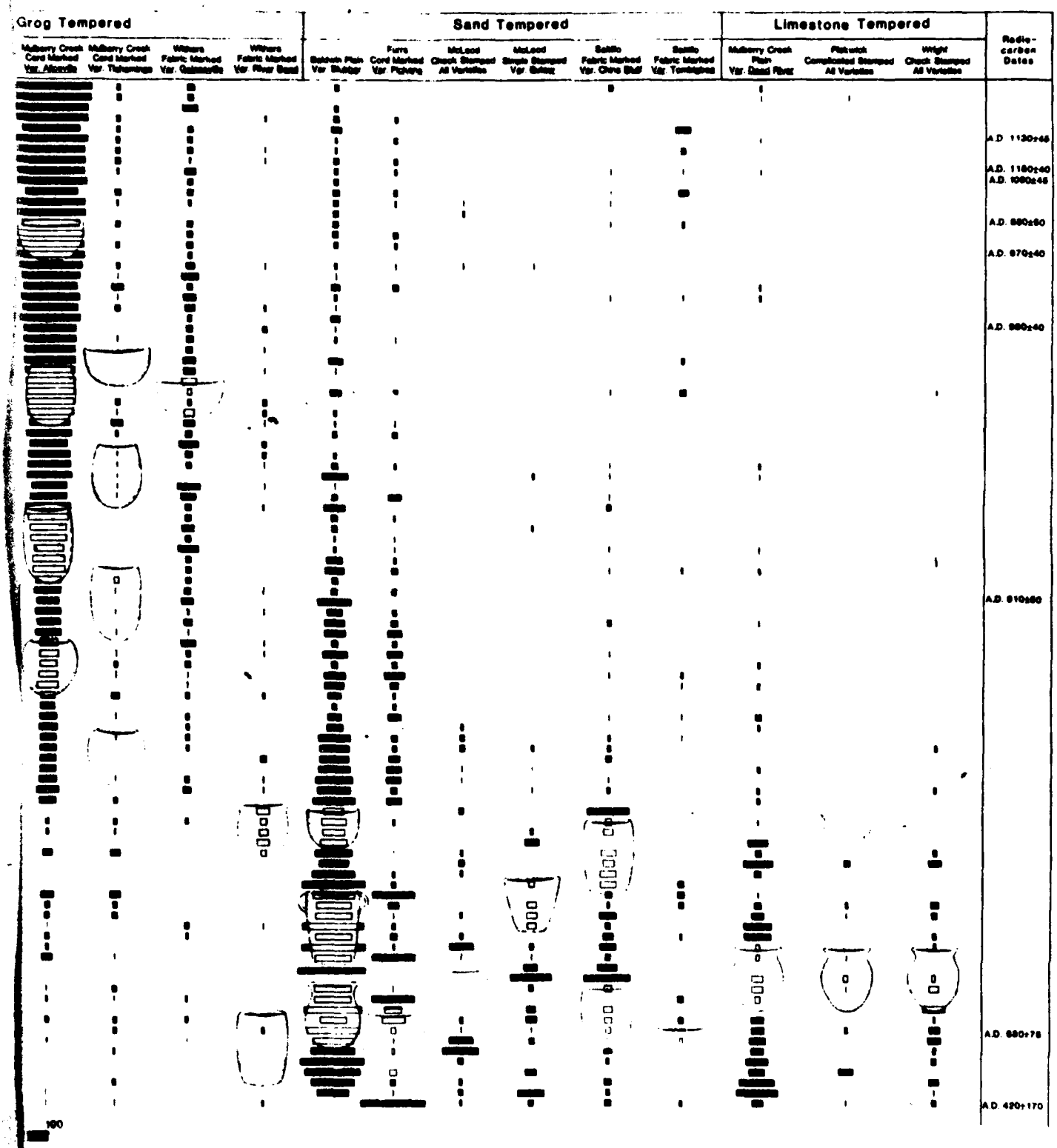


Figure 1.

/oodland and Late Woodland Ceramics from the Gainesville Lake Area



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because earlier sherds were mixed in the pit fills. Because these features contained small but consistent numbers of varieties diagnostic of the Late Miller II Turkey Paw complex, these features seriated into the Turkey Paw group of features. The remaining ceramics and percentages in these features are dominated by Furrs Cord Marked and are characteristic of the early Miller III early Vienna complex. Another reason these three features may have been pulled up earlier than their correct position is that Furrs Cord Marked peaked during the middle Miller II Tupelo subphase. Consequently the earliest of the late Miller II Turkey Paw features had an abundant supply of Furrs Cord Marked. This feature is clearly in correct position. It had no percentages characteristic of early Miller III and it yielded a radiocarbon date of A.D. 420, perfect for an early Turkey Paw subphase context. The problem of inclusive sherds is clearly evident in three features from Site 1Gr2 which Jenkins (1981, Table 13) had assigned to the Cofferdam subphase. The numerically dominant ceramics and percentage in Features 64, 94, and 122 are indeed diagnostic of the Cofferdam complex. Because these three features contained an abundance of Baldwin Plain var. Blubber, an earlier type and variety, the seriation process moved these features back slightly in time. Undoubtedly the inclusive sherd effect also influnced the relative position of other features, but not as drastically. The remaining 92 features seem to form a logical continuum, evidenced by the consistency of the radiocarbon dates.

Catfish Bend features were segregated from Gainesville subphase features by the presence of shell tempered pottery in the latter. Shell tempered sherds amounted to less than 1 percent of the total in Gainesville subphase features. Because shell tempered pottery was so sparsely represented it was not included in the seriation and these features seriated into one group. Perhaps if the small amounts of shell tempered pottery in these features had been entered into the seriation, these features would have seriated into two groups.

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APPENDIX 2

INTERPRETIVE APPENDIX

PALEO-INDIAN STAGE
(10,000 B.C. - 8000 B.C.)

The earliest occupation of the Gainesville Lake area was probably as early as 10,000 B.C. during what archeologists term the Paleo-Indian stage. At this time the Gainesville Lake area was very sparsely populated by small nomadic groups. These people derived their primary subsistence from large game animals such as bison, mammoth, and deer. These animals were killed and processed with large fluted lanceolate projectile points which could also function as knives. Very little else is known about these earliest inhabitants.

ARCHAIC STAGE
(8000 B.C. - 1000 B.C.)

The next stage in the prehistoric development of this region is known as the Archaic stage. By this time, ca. 8000 B.C., the climate had changed substantially, and as a result so had many of the plant and animal species indigenous to this region. Because of this environmental change, human adaptive strategy also changed. New kinds of projectile points and tool kits evolved. During the earliest part of the Archaic stage, the large fluted lanceolate projectile point forms evolved into generally smaller unfluted lanceolate forms. Throughout the Archaic stage deer supplemented by hickory nuts and acorns were the most important food items. Although other kinds of smaller mammals and plants were also hunted and gathered, deer and the nut foods consistently provided the most plentiful harvest with the least amount of effort. Although the subsistence base remained approximately the same throughout the Archaic, projectile point shapes evolved substantially during this time. Archaeolgists have deciphered the evolutionary sequence of these projectile point forms and can now date most habitation sites from the shape of the projectile points found. The Archaic stage is divided into Early, Middle, and Late periods based primarily on these projectile point styles. During the Early Archaic period the small lanceolate projectile points evolved into projectile points with side notched bases, and slightly later, into projectile points with corner notched bases. By the Middle Archaic period the corner notched form had evolved into a broad stemmed base form. By the Late Archaic period the general projectile point style was large with a more narrow stem than earlier. Also during the Middle and Late Archaic, people were beginning to live in larger semipermanent camps during the summer and fall. During the winter and spring they dispersed into smaller groups to hunt and gather wild foods.

GULF FORMATIONAL STAGE
(1000 B.C. - 100 B.C.)

During the Gulf Formational stage the basic Late Archaic life style remained unchanged. Deer and nuts continued as the basic food staples and

the large stemmed projectile point remained the basic form. At this time an important religious and trading center emerged in the lower Mississippi Valley from which considerable amount of trade was generated eastward across the Coastal Plain. As a result, several cultural groups probably met and exchanged not only goods but ideas. One significant concept that was introduced into the Tombigbee Valley as a result of this trade was pottery making. The earliest pottery that appeared here was tempered with plant fibers and was like that made on the southern Atlantic coast between South Carolina and Florida at the same time, ca. 1000 B.C. Pottery had first appeared in those areas as early as 2000 B.C. and represents the earliest known pottery in North America. With the introduction of pottery, and its several distinct styles, the archaeologist could more precisely date individual habitation sites because pottery was consistently manufactured and decorated in a particular manner. The earliest pottery along the Tombigbee River is known as the Wheeler series. By the end of the Gulf Formational stage, ca. 100 B.C., ceramic manufacture had reached an artistic florescence in the Alexander ceramic series.

WOODLAND STAGE
(100 B.C. - A.D. 1000)

By approximately 100 B.C. a new and distinct cultural group known as Miller moved into the Tombigbee Valley from the north. These people lived in larger, probably more permanent villages than the preceding Alexander people. The Miller population seems to have been slightly larger than the preceding Alexander population but their diets seem to have been about the *same*. The earliest Miller people also cremated their dead and buried them in mounds. The more important people were frequently buried with items from as far away as Michigan or Florida. The fabric marked and cord marked pottery these people manufactured was drab compared to the previous Alexander standards.

A dramatic increase in Miller population around A.D. 700 or A.D. 800 is documented by the substantial increase in the number and size of sites dating to this period. This increase in population density was probably due to the introduction of corn grown in small amounts. The increased population permitted by the small but stable corn harvest required increased hunting to maintain a stable meat intake. As the population continued to increase, so did the hunting pressure on deer. As the deer population was reduced, smaller mammals became more important in the diet, as did fish, turtles, and shellfish.

At this time the small triangular projectile point was introduced. Many archaeologists feel that the introduction of this projectile point style marks the introduction of the bow and arrow. The bow and arrow would have permitted more efficient hunting and an even further reduction of the deer population.

There is little archaeological evidence of ceremonialism or religious beliefs for the late Miller period. The dead were often buried in trash pits. There is little evidence of trade or contact with neighboring regions and the late Miller period seems to have been an interval of isolationism and hardship for the inhabitants of the central Tombigbee region.

MISSISSIPPIAN STAGE
(A.D. 1000 - A.D. 1550)

A distinctive new cultural pattern, the Mississippian stage, has been dated in the central Tombigbee River Valley to approximately A.D. 1000. By A.D. 1200 or A.D. 1300 the Mississippian culture had reached a florescence in the central Tombigbee Valley region. Although many Mississippians probably could trace their ancestry to the late Miller time period, the Mississippian culture shared few common characteristics with the earlier Miller culture. In fact, the initial origin or impetus for the appearance of the Mississippian culture can be traced to the adjoining Warrior River Valley where a dynamic and powerful religous and political center had developed at Moundville. The central Tombigbee Valley at this time should be considered the western periphery and part of this Moundville culture.

The Moundville culture is characterized by many developments not found in the preceding Miller culture. Probably one of the most important differences is the reliance on corn agriculture. At approximately A.D. 1000 a more efficient kind of corn or a more efficient organization for its production and use had been introduced into the Warrior and Tombigbee Valleys. A new religious structure developed for the regulation of ceremonies associated with growing and harvesting corn. A political structure developed with the authority to redistribute stored corn in the event that a crop failed in a particular area. Although corn served as their basic storable food supply, the Mississippian people also hunted deer and small mammals, fished, and gathered numerous wild plant foods and shellfish.

Distinctive large pyramidal mounds were often built as substructures for houses of important religious or political leaders. These mounds were sometimes used for burial.

Moundville ceramics are easily distinguished from the preceding late Miller ceramics which had been tempered with crushed pot sherds. Miller vessel surfaces were roughened with a cord wrapped paddle. Moundville ceramics were tempered almost exclusively with crushed mussel shell. Aproximately 90 percent of all pottery vessels were plain. The remaining 10 percent were incised or engraved, frequently with mythological images.

PROTOHISTORIC
(A.D. 1542 - 1736)

By approximately A.D. 1400 or A.D. 1500 the Moundville political organization shows evidence of degeneration. These are fewer public works such as mounds and fewer crafts requiring specialized artisans. The Moundville culture was seriously affected by the DeSoto expedition's activities in the Warrior and Tombigbee River Valleys. DeSoto's army confiscated corn supplies which had been stored for the winter; held local chiefs hostage as the army moved from village to village, sometimes releasing them in hostile territory; and introduced European diseases to which the Indians had no natural immunity. In its wake, the DeSoto army left a starving, disease ridden population with probably few remaining

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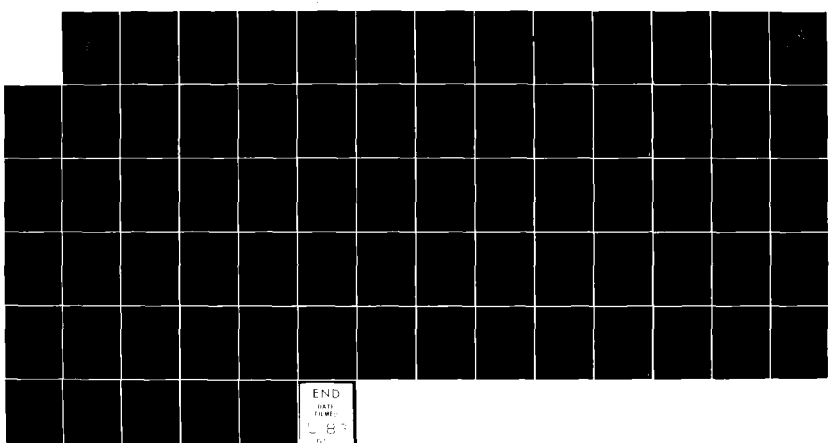

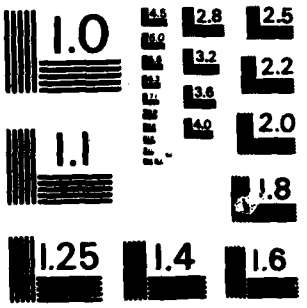

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leaders. The already delicately balanced system was probably virtually destroyed by this first European encounter.

HISTORIC
(1736-)

When the French built Fort Tombecbe in 1736 the central Tombigbee Valley was virtually deserted. Decimated by famine, disease, and slaving raids by the Chickasaw and English traders, there were no remaining permanent villages in the central Tombigbee Valley. Any remaining refugees had probably moved to the Alabama River Valley where they joined their kinsmen, the Alabama. Even though the Alabama spoke a dialect of Choctaw, by 1700 they had joined the Creek Confederacy.

APPENDIX 3

BIOARCHAEOLOGICAL COMPARISONS OF THE LATE MILLER III AND SUMMERVILLE I PHASES IN THE GAINESVILLE LAKE AREA

Gloria G. Cole, Mary C. Hill, and H. Blaine Ensor

INTRODUCTION

This Appendix was developed from concepts originally outlined in a paper presented to the 36th Southeastern Archaeological Conference at Atlanta (Ensor and Hill 1979) which appeared as the Appendix of the original draft of the Gainesville Lake area Synthesis volume. The analytical hindsight provided by the preparation of the five volumes of the Gainesville series together with reviewer comments on the original draft, and the completion of excavations at the Lubbub Creek Archaeological Locality indicated that the 1979 version of this paper required revisions to accommodate the accumulated implications of the Gainesville mortuary data which had become apparent by 1982.

Since the original draft of this report, the late Miller III subphases have been more clearly defined and dated. It is now fairly certain that the Catfish Bend subphase (formerly late Miller III) spans the period from A.D. 900 to A.D. 1000; the Gainesville subphase (formerly terminal Miller III) spans the period from A.D. 1000 to A.D. 1100; and the early Mississippian Summerville I phase spans the period from A.D. 1000 to A.D. 1200. The Cofferdam subphase (formerly Middle Miller III) has now been dated from A.D. 1000 to A.D. 1100 and may date from A.D. 900 to A.D. 1200. All of these cultural manifestations have been placed within a time span of 300 years encompassing the Late Woodland to Mississippian transition and all of them have been identified within a space less than 3 km (1.86 mi) in diameter at Site 1Pi61 and at several loci within the Lubbub Creek site complex.

The present version of this paper has been revised to present the mortuary data in a descriptive format which might be useful for further analysis. The osteological data originally described in 1979, (Hill 1981) has been re-examined to discern any patterns that might correspond to the subphase definitions. Mortuary and subsistence data generated by the Lubbub Creek excavations were referenced. These data are critical to the understanding of th_ evolutionary processes reflected in the three mortuary populations considered here.

Burials recovered from five distinct Late Woodland Miller III cemeteries at Site 1Pi61 and an early to mature Mississippian Summerville I cemetery excavated at Site 1Pi33 in the central Tombigbee Valley provide one of the first data sources from which to make bioarchaeological inferences for the Late Woodland to Mississippian transitional period. Because of the abundance of mussel shell in the middens associated with cemeteries at both sites, bone preservation was excellent.

Mortuary practices, biological adaptation, and levels of sociocultural integration inferred from data recovered from cemeteries at Sites

1Pi33 and 1Pi61 are described and compared in this chapter. Mortuary patterns provide some information on Late Woodland and Mississippian societies at both the local and regional levels. Age, sex, burial position, burial orientation, presence or absence of grave goods, site localities, and biological aspects of human adaptation were considered in this analysis. Late Woodland and Mississippian societies identified to date are briefly discussed in the following section.

LATE WOODLAND AND MISSISSIPPIAN SOCIETY IN THE UPPER AND CENTRAL TOMBIGBEE VALLEY

The Late Woodland period in the upper and central Tombigbee drainage was defined by Jennings (1944) and Cotter and Corbett (1951) from the presence of distinctive grog tempered ceramics with cord marked and plain surface treatment. The Late Woodland use of grog temper contrasted with the use of sand temper during the Middle Woodland period. Trade sherds and vessels present in Middle Woodland burial mounds and habitation sites, are generally absent at Miller III sites, although Weeden Island sherds have been found in the central Tombigbee Valley (Jenkins 1981). The lack of exotic sherds during the Late Woodland is widespread throughout the lower Mississippi Valley (Brain 1971) and the middle Mississippi Valley (House 1975). The overall drabness and decline in ceramic variation even led Williams (1963:297) to describe Late Woodland groups collectively as "good grey cultures." Within the central Tombigbee drainage, Mulberry Creek Cord Marked and Baytown Plain (Jenkins 1981) and numerous minority types and varieties characterize Late Woodland ceramic assemblages.

Within the central Tombigbee Valley distinct changes in the density and distribution of Miller III sites took place around A.D. 700 (Jenkins and Curren 1976). Both the number and size of Late Woodland sites increase at the beginning of the early Miller III Vienna subphase as defined by Jenkins (1981). Blakeman (1975) noted that within the upper Tombigbee drainage during the Late Woodland period, Miller III sites were concentrated in the prairie physiographic zone. This change in settlement from the previous period may correspond to the introduction of corn during the early Miller III Vienna subphase (Caddell 1981a) and a concomitant selection for more arable soils (Jenkins and Curren 1976, Blakeman 1975).

A dramatic population increase is inferred for the Miller III period from the increase in the number of base camps and from the larger size and density of associated middens. Five Miller II base camps and 25 Miller III base camps were identified during the Gainesville Lake excavations. Jenkins (this volume, Chapter V) observed that the increased midden density at Miller III sites could also be the result of increased sedentism. Increased sedentism throughout Miller III is also indicated by the slight increase in corn recovered from Miller III features.

A central based wandering type of settlement system has been fairly well documented for the Miller III phase. Base camps located along the river terraces were occupied at least during late spring through fall. Seasonality was inferred from corn and wild seeds recovered from Miller III features (Caddell 1981a). Caddell (1981a:50) cautions that re-

mains of plants used during winter and early spring are not susceptible to preservation and continuous occupation of the base camps by some portion of the population is a possiblity. Transitory camps, which may be winter hunting camps or other task specific procurement stations, have been identified both in the Fall Line Hills east of the floodplain and in the Black Prairie west of the floodplain (Jenkins, this volume, Chapter V).

Faunal remains recovered from base camp assemblages indicate a significant decrease in deer, with a corresponding increase in other mammals, turtles, fish, and shellfish throughout the Miller III phase. This increased dependence on second line resources may reflect diversification of the resource base as a result of population pressure.

Miller III lithic assemblages are characterized by a change from the Middle Woodland use of stemmed projectile points used with an atlatl to the Late Woodland use of triangular arrow points (Nielsen and Jenkins 1973, Blakeman et al. 1976). Ensor (1981) noted Miller III phase stylistic and technological characteristics that corresponded to ceramic subphase definition. Arrow points gradually reduced both in size and variability, indicating an increase in technological sophistication and efficiency of bow technology. Jenkins and Ensor (1978) noted an apparent decrease in Late Woodland house size from Middle Woodland houses. Late Woodland houses were small circular structures of single post construction suitable for a conjugal family. Semisubterranean rectangular structures appear during the terminal Miller III Gainesville subphase.

Based on cumulative data from the Gainesville excavations, Jenkins (this volume, Chapter V) has identified four Miller III subphases. These subphases, had previously been designated early Miller III (Vienna), middle Miller III (Cofferdam), late Miller III (Catfish Bend), and terminal Miller III (Gainesville). Both radiocarbon dates and ceramic seriation indicate that the Cofferdam subphase (Middle Miller III) is fully contemporaneous with the Gainesville subphase and possibly the Catfish Bend subphase as well.

The Vienna subphase is characterized by sand and grog tempered pottery. Burials during this subphase were tightly flexed with no consistent orientation or direct burial associations. Vienna subphase components have been identified at Site 1Pi61 and at the Tibbee Creek site (O'Hear and Larsen 1981). The succeeding Catfish Bend subphase is characterized by grog tempered pottery with cord marked sherds predominanting over plain. Sand temper is an extreme minority. The Catfish Bend subphase component at Site 1Pi61 includes three cemeteries or burial clusters. Most burials were tightly flexed and not oriented in any particular direction. Burial associations, shell beads and pendants, accompanied 10 of the 45 Catfish Bend subphase burials and were associated with all age and sex classes.

The Cofferdam subphase shows clear continuities with the Catfish Bend subphase and is characterized ceramically by a dominance of Mulberry Cord Marked var. Aliceville over Baytown Plain var. Roper. Cofferdam burials are tightly flexed or semiflexed with no particular orientation and no burial associations. The burials were generally placed in storage or cooking pits (Blakeman et al. 1976:87-104, Jenkins, this volume, Chap-

ter V). Cofferdam subphase components have been identified at the Cofferdam site (Blakeman et al. 1976), Sites 1Gr1X1 and 1Gr1 in the Gainesville Lake area, and a cemetery may be represented at the Bynum site (Cotter and Corbett 1951:14-15).

The middle Miller III occupation at Lubbub Creek may represent the Cofferdam subphase and is estimated to date from A.D. 900 to A.D. 1000 (Peebles 1981). Only two Late Woodland burials were recovered during the Lubbub Creek exacavations (Powell 1981). A large portion of the Late Woodland occupation at Lubbub Creek was assigned to the middle Miller III or Cofferdam subphase on the basis of ceramics recovered from several excavated pits (Peebles 1981:120). The Lubbub Creek Late Woodland occupation was represented by a 2.5 ha component (Site 1Pi12) northwest of Summerville Mound, a second component 200 m south of the mound, and by three additional components east of the mound which were preserved and not sampled during the Lubbub Creek excavations (Peebles 1981).

Portions of Late Woodland middens at Site 1Pi12 were sampled by 10 by 10 m units during the University of Michigan excavations. The only Late Woodland features encountered were in the area south of the mound. Grog tempered pottery was also encountered on the premound surface and one smudge pit in that area, Pit 13, dated at A.D. 980 (Blitz 1981:210), was assigned to Middle Miller III (the Cofferdam subphase). The pit contained no ceramics, however, and its probable association with Summerville I structures in the premound precinct indicate that the pit is a Summerville I feature (Jenkins, personal communication 1982).

In addition to the Cofferdam components sampled by the University of Michigan, a Gainesville subphase feature (Feature 51) was excavated at Site 1Pi33 within the Lubbub Creek Archaeological Locality during the Gainesville Lake excavations.

The Lubbub Creek Late Woodland occupation is less than 3 km (1.86 mi) north of the late Miller III occupation at Site 1Pi61 and was probably less than 30 minutes distant by canoe.

The Gainesville subphase is fully contemporaneous with the Cofferdam subphase and succeeds the Catfish Bend subphase. The ceramic percentages of grog tempered cord marked to plain are nearly identical in Catfish Bend and Gainesville subphase features. The Gainesville subphase is distinguished by the presence of grog tempered loop handles on Baytown Plain var. Roper vessels and a small percentage of shell tempered and mixed grog and shell tempered pottery. The Gainesville subphase burials analyzed in the following sections were identified from the presence of shell tempered pottery in the pit fills (Hill 1981:241, Table 2). Most Gainesville subphase burials at Site 1Pi61 were semiflexed in a supine position with legs to one side with an east, southeast, or northeast orientation. Artifacts were associated with all sex and age classes and included quantities of shell beads, shell pendants, two greenstone celts, two turtle shells, and two drilled bear canines. Twelve of the 33 Gainesville subphase burials at Site 1Pi61 had associated artifacts.

Mississippian studies in the central Tombigbee Valley have lagged behind Late Woodland studies but Jenkins and Ensor (1981) and Marshall

(1977) have now located Moundville related components and a local center. Similar Mississippian groups with nucleated settlement systems (Beardsley et al. 1956) based on corn agriculture are evident in both the Tombigbee and Warrior drainages.

The Summerville Mound, Site 1Pi85, at the Lubbub Creek Archaeological Locality was first reported by C.B. Moore (1901). The mound was tested by Jenkins (1977) and recently was excavated by the University of Michigan (Peebles 1981). Site 1Pi33, 106.7 m (350 ft) east of the Summerville Mound, within the Lubbub Creek Archaeological Locality site complex (Jenkins and Ensor 1981: Figure 46) contained a Mississippian cemetery of mainly Summerville I phase interments. One of these, Burial 20, included Southern Cult motif artifacts. Later excavations by the University of Michigan sampled other areas of the Lubbub Creek Archaeological Locality and 14 interments assigned to the Summerville I phase were recovered (Powell 1981). No planned cemetery or Southern Cult motif artifacts were encountered in the large area sampled by the later excavations. Of the 14 Summerville I burials recovered during the University of Michigan excavations, six clustered in the northern corner of Hectare 500N-300E had associated ceramic vessels. The only other Summerville I mortuary artifact was a bone pin associated with an infant burial in Hectare 500N-400E (Powell 1981:457). The low density of Summerville I burials throughout the large area of the Lubbub Creek Archaeological Locality sampled by the University of Michigan excavations provides good evidence that the Summerville I burial cluster at Site 1Pi33 represents a spatially segregated cemetery. The artifacts associated with some individuals of this group suggest that the cemetery represents a kinship unit of a different status from other Summerville I burials interred throughout the Lubbub Creek site complex. Copper artifacts bearing repousse falcon and eye motifs associated with Burial 20B in the multiple interment of Burial 20 may mark the chiefly status of this individual (Jenkins, this volume, Chapter V, Fig. 22).

Mississippian burials at Site 1Pi33 and throughout the Lubbub Creek Archaeological Locality were primary interments until the Summerville IV or Late Mississippian period when there is clear evidence that a charnel house type of burial program had been instituted. A total of 7 burials assigned to the Summerville IV phase contained 64 individuals (Powell 1981:458). The lack of any evidence for delayed interment of individuals for the Summerville I through III periods or for any of the other burials in the 1Pi33 cemetery suggests that the limbs of two individuals with two complete adult males in Summerville I Burial 20 are not the results of charnel activities.

The plan of the Summerville I community at Lubbub Creek was fairly well documented during the University of Michigan excavations (Peebles 1981:122-124). The settlement was bounded on the west and south by a bastioned palisade and on the north and east by the river enclosing an area of 19 hectares (Peebles 1981:122). The river probably extended considerably farther east during the Mississippian occupation than its course during the Lubbub Creek excavations, however (Cole 1981b). Approximately 8.5 hectares of the area enclosed by the palisade could be assigned to the Summerville I occupation. Several midden deposits, four structures, four pits, and fourteen burials (Powell 1981) represent the

of the Summerville I village. A palisaded or stockaded plaza (Cole and Albright 1981) enclosed a ceremonial precinct situated near the extreme western end of the plaza. Six structures (constructed in three sequential pairs) in the premound precinct (Peebles 1981, Blitz 1981) were assigned to the Summerville I period. The Summerville I cemetery at Site 1Pi33 was part of this planned community and may represent residents of the premound precinct.

The Catfish Bend and Gainesville subphase burials recovered at Site 1Pi61 are compared to the Summerville I interments at Site 1Pi33 in the following sections.

DEFINITION OF CEMETERIES: SITES 1Pi61 and 1Pi33

Five spatially distinct Late Woodland cemeteries were exposed at Site 1Pi61. Cemetery areas were defined primarily by the horizontal segregation of clustered individuals. Separate areas within the site used for disposal of the dead are shown in Figure 1. The cultural and temporal integrity of each cemetery has been well documented through ceramic seriation by Jenkins (1981 and Appendix 1, this volume). Jenkins relegated each burial to its proper Miller III subphase context, either the Catfish Bend or Gainesville subphase using the presence of shell tempered pottery to distinguish Gainesville from Catfish Bend features. The grog tempered types and varieties within each subphase were nearly identical. The subphase is further substantiated in following analyses but it is possible that some Gainesville burials without shell tempered pottery were inadvertently assigned to the Catfish Bend subphase. Some burial pits contained no ceramics and may be either Catfish Bend or Gainesville subphase burials. The cultural affiliation of these burials was classified as undetermined (Table 1) and they were not included in the analysis.

Catfish Bend Subphase Cemeteries: Site 1Pi61

Two well defined Catfish Bend subphase cemeteries located on the northwestern and central portions of the site were designated Catfish Bend West and Catfish Bend Central (Fig. 1). An additional smaller cemetery, Catfish Bend South, was located at the extreme southern edge of the site. The Catfish Bend Central cemetery contained 18 individuals. The Catfish Bend West cemetery contained 16 individuals and was separated from the Catfish Bend Central cemetery by approximately 9 m (30 ft). The area designated Catfish Bend South contained 11 individuals. Two of these, Burials 46 and 47, were interred under the floor of Structure 5, seven were adjacent to the structure, and two were within a ring of mussel shell 70 ft (21.3 m) east of Structure 5.

Gainesville Subphase Cemeteries: Site 1Pi61

A Gainesville subphase cemetery of 19 individuals, designated Gainesville North, was located on the northeastern portion of the site (Fig. 1). A second less well defined group of 14 Gainesville subphase interments, designated Gainesville South, was dispersed throughout the southern part

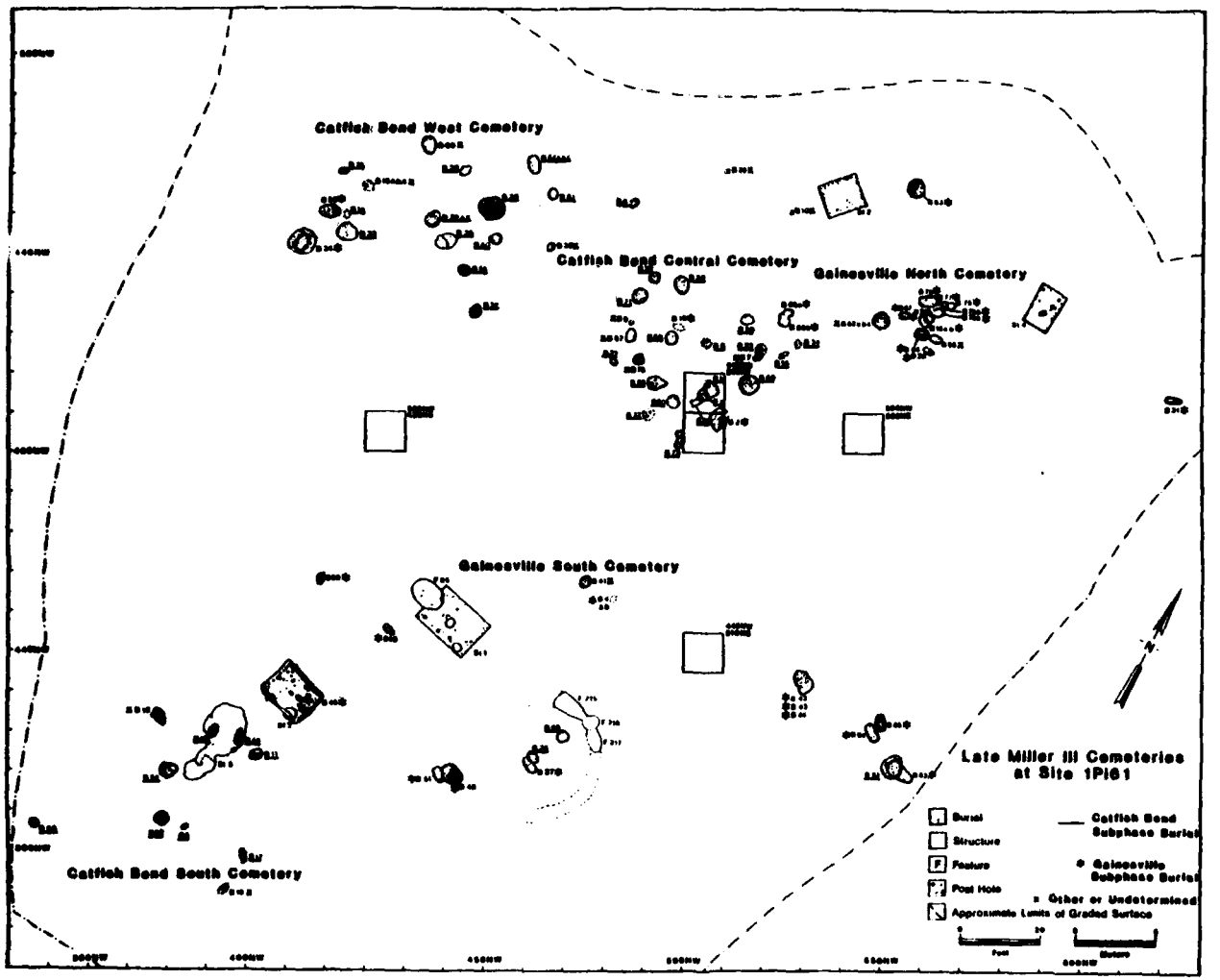

Catfish Bend West Cemetery
Catfish Bend Central Cemetery
Gainesville North Cemetery
Gainesville South Cemetery
Catfish Bend South Cemetery
Late Miller III Cemeteries
at Site 1PI61
Burial
Structure
Feature
Post Hole
Approximate Limits of Graded Surface
Catfish Bend
Subphase Burial
Gainesville
Subphase Burial
Other or Undetermined

Figure 1.

Table 1. Site 1Pi61: Direct Burial Associations.

Burial Number	Feature Number	Pit Type/ Dimensions (ft)	Associations	Sex	Age (Years)	Cultural Affiliation
1	6	Large Basin 4.2x3.7x1.2	47 ground freshwater Goniobasis cf. pupaeformis beads; 42 disk-shaped marine gastropod beads; 3 cylindrical marine gastropod beads; 2 rectangular beads; 2 rectangular marine gastropod beads.	Undetermined	1.5-2.0	Catfish Bend subphase
2	7	Large Basin 4.1x3.9x1.4	19 disk-shaped marine gastropod beads.	Male	30±5	Gainesville subphase
3	69	Small Basin 2.85x2.35x0.7	None	Female	40+	Catfish Bend subphase
4	-	-	9 ground freshwater Goniobasis cf. pupaeformis beads; 16 drilled marine Marginella apicina beads; 1 cylindrical marine gastropod bead; 1 triangular-shaped marine gastropod pendant.	Undetermined	6-7	Gainesville subphase
5	-	-	None	Female	25-35	Catfish Bend subphase
6	-	-	None	Female?	Older adult	Catfish Bend subphase
7	-	-	None	Male?	10±2	Undetermined
8	-	-	1 large Madison projectile point; 52 ground freshwater Goniobasis cf. pupaeformis beads.	Female	25+	Catfish Bend subphase
9	-	-	None	Undetermined	Fetus	Undetermined
10	-	-	None	Undetermined	10±3	Undetermined
11	231	Small Basin 2.45x2.25x0.5	None	Female	30+	Catfish Bend subphase
12	232	Rectangular Basin 4.1x2.4x0.6	None	Female	25-30	Undetermined
13A	-	-	-	Undetermined	Infant	Undetermined
13B			1 large Madison, 1 Class 19, and 4 Hamilton projectile points.	Female	19-22	Undetermined
13C				Male?	Adolescent	Undetermined
14	-	-	None	Male?	Adult	Catfish Bend subphase
15	233	Small Basin 2.1x1.3x0.3	None	Female?	30+	Catfish Bend subphase
16A	235	Large Basin	2 marine Marginella apicina beads.	Female	20-28	Gainesville subphase
16B		1.8x2.2x0.5	None	Undetermined	0.5-0.75	Gainesville subphase
17	236	Large Basin 4.2x2.2x-	None	Female?	15-17	Catfish Bend subphase
18	237	Small Basin 3.1x1.5x0.3	None	Male?	30+	Undetermined
19	238	Indeterminate 3.0x1.6x-	1 polished greenstone celt; 395 marine Marginella apicina beads.	Undetermined	10-11	Gainesville subphase
20	239	Small Basin 2.1x1.95x0.1	None	Undetermined	0.75	Undetermined
21	240	Indeterminate 1.9x1.5x-	None	Undetermined	0.75-1	Catfish Bend subphase
22	241	Small Basin 3.0x1.6x0.2	None	Undetermined	25+	Catfish Bend subphase
23	242	Large Basin 3.6x2.5x0.2	2 ground freshwater Goniobasis cf. pupaeformis beads; 34 marine Marginella apicina beads; 16 disk-shaped marine gastropod beads; 2 cylindrical marine gastropod beads; 1 teardrop-shaped marine gastropod pendant.	Female	30±5	Catfish Bend subphase
24	243	Small Basin 3.0x1.5x1.0	None	Male	35-45	Catfish Bend subphase
25	244	Large Basin 3.2x2.2x-	None	Male	35+	Catfish Bend subphase
26	245	Rectangular Basin 3.25x1.0x0.5	None	Male	25-35	Catfish Bend subphase
27	246	Rectangular Basin 4.6x2.4x0.5	1 polished greenstone celt; 425 ground freshwater Goniobasis cf. pupaeformis beads; 67 ground marine Marginella apicina beads; 1 disk-shaped marine gastropod bead; 1 triangular shaped marine gastropod pendant; two drilled black bear canines.	Male	25-35	Gainesville subphase
28	20	Large Basin 4.45mx.9x0.75	1,295 ground freshwater Goniobasis cf. pupaeformis beads; 1 disk-shaped marine gastropod bead; 103 drilled freshwater Anculosa cf. breviscira beads; 1 drilled triangular-shaped marine gastropod pendant.	Female	16	Catfish Bend subphase.
29	17	Structure 1	None	Undetermined	Child	Undetermined
30	-	-	None	Female	35+	Gainesville subphase
31	247	Rectangular Basin 4.4x1.9x0.6	None	Undetermined	Adult	Gainesville subphase
32	68	Straight Cylindrical 3.3x3.1x2.2	None	Undetermined	0±1	Catfish Bend subphase
33	39	Large Basin 5.3x4.4x1.0?	None	Female	30±3	Catfish Bend subphase
34	38	Small Basin 4.0x1.1x0.6	None	Male	50+	Gainesville subphase
35	41	Large Basin ~4.0x0.9	1 Madison projectile point.	Male	35	Catfish Bend subphase
36	52	Small Basin 2.85x2.40x0.9	None	Female	19-22	Early Catfish Bend subphase
37	12	Amorphous 2.1x1.05x1.2	None	Undetermined	Adolescent	Catfish Bend subphase
38	53	Small Basin 2.3x1.3x0.5	None	Undetermined	10-11	Late Vinson subphase
39	67	Large Basin 4.4x3.4x0.55	None	Female	30-35	Catfish Bend subphase
40	70	Small Basin 3.1x2.35x0.25	None	Male	9-11	Catfish Bend subphase
41	78	Large Basin 3.3x3.15x0.55	None	Undetermined	0.0-0.5	Late Vinson subphase
42	94	Rectangular Basin 5.85x3.95x0.7	None	Male	30+	Gainesville subphase
43	96		None	Male	45±5	Gainesville subphase
44	96		None	Female	35+	Gainesville subphase

Table 1. Site 1Pi61: Direct Burial Associations (Continued).

Burial Number	Feature Number	Pit Type/ Dimensions (ft)	Associations	Sex	Age (Years)	Cultural Affiliation
45	298	Large Basin 3.6x2.3x0.5	None	Undetermined	0-0.16	Gainesville subphase
46	98	Structure 5	None	Female	20±2	Catfish Bend subphase
47	98	Structure 5	None	Female	20	Catfish Bend subphase
48	101	Large Basin 5.7x5.0x0.55	2 Cooter turtle shell (Pseudemys sp.) rattles or cups.	Male	30+	Gainesville subphase
49	100	Rectangular Basin 3.45x1.9x0.6	47 disk-shaped marine gastropod beads; 5 cylindrical marine gastropod beads; 2 drilled cylindrical shaped marine gastropod beads.	Undetermined	1	Gainesville subphase
50	103	Rectangular Basin 3.10x1.75x0.4	None	Female?	9-10	Gainesville subphase
51	111	Large Basin 3.95x2.0x0.8	None	Male	35+	Gainesville subphase
52	115	Large Basin 3.65x3.35x0.25	None	Female	25+	Catfish Bend subphase
53	117	Rectangular Basin 6.43x4.0x0.6	None	Male?	30+	Catfish Bend subphase
54	119	Large Basin 4.0x3.2x0.45	None	Male?	19±2	Catfish Bend subphase
55	123	Small Basin 3.5x2.45x0.75	1 Madison and 1 Hamilton projectile points; 6 disk-shaped marine gastropod beads; 1 drilled teardrop-shaped marine gastropod pendant.	Female	35±5	Catfish Bend subphase
56	124	Rectangular Basin 5.5x3.3x0.75	11 ground marine Marginella apicina beads; 17 disk-shaped marine gastropod beads; 4 cylindrical marine gastropod beads.	Male	19±2	Gainesville subphase
57	129	Small Basin 3.0x2.1x0.3	None	Undetermined	4-5	Miller III phase
58	130	Large Basin 4.7x3.0x0.5	233 ground freshwater Goniobasis cf. pupaeformis beads; 26 disk-shaped marine gastropod disk-shaped beads; 2 cylindrical marine gastropod beads.	Undetermined	10	Catfish Bend subphase
59	132	Straight Cylindrical 2.75x2.55x1.30	1,142 ground freshwater Goniobasis cf. pupaeformis beads.	Female	21	Catfish Bend subphase
60	133	Large Basin 4.95x4.4x1.25	8 disk-shaped marine gastropod beads.	Female	30+	Catfish Bend subphase
61A	131	Straight Cylindrical	None	Male	Adult	Catfish Bend subphase
61B		4.2x3.3x2.5	None	Female	Adult	Catfish Bend subphase
			None	Undetermined	7-9	Catfish Bend subphase
62A	139	Straight Cylindrical	1 large Madison projectile point.	Male	35+	Early Vienna subphase
62B		4.3x4.1x1.35	None	Male?	40+	Early Vienna subphase
62C			None	Female	25-30	Early Vienna subphase
63	141	Large Bell/Straight Cylindrical 4.35x4.1x3.4	None	Male	35+	Gainesville subphase
64	150	Rectangular Basin 3.8x2.4x0.4	None	Female?	8-9	Gainesville subphase
65	151	Rectangular Basin 3.05x1.9x0.25	None	Undetermined	3-4	Catfish Bend subphase
66A	154	Large Basin	5 ground freshwater Goniobasis cf. pupaeformis beads.	Undetermined	2-3	Gainesville subphase
66B		3.5x3.1x0.2	17 ground freshwater Goniobasis cf. pupaeformis beads; 45 drilled marine Marginella apicina beads.	Male?	10-15	Gainesville subphase
67	157	Rectangular Basin 2.5x1.8x1.4	None	Male	13-14	Gainesville subphase
68	156	Large Basin 3.4x3.1x0.8	None	Male	25+	Catfish Bend subphase
69	162	Large Basin 3.9x3.4x0.55	76 ground freshwater Goniobasis cf. pupaeformis beads; 1 drilled triangular marine gastropod pendant.	Undetermined	0.75	Late Vienna subphase
70A	160	Large Basin	None	Undetermined	6-7	Catfish Bend subphase
70B		3.9x3.65x0.6	None	Undetermined	3-4	Catfish Bend subphase
71	158	Large Basin 3.75x3.6x0.7	None	Female	30±5	Catfish Bend subphase
72	167	Small Basin 2.45x2.2x0.25	None	Undetermined	0.0-0.5	Catfish Bend subphase
73	165	Large Basin 4.4x3.9x0.6	2 ground Goniobasis cf. pupaeformis beads.	Male	45±5	Catfish Bend subphase
74	175	Small Basin 2.7x2.3x0.3	None	Undetermined	0.75-1	Gainesville subphase
75	176	Small Basin 2.3x1.75x0.15	None	Undetermined	0.75	Gainesville subphase
76	177	Small Basin 2.4x2.25x0.2	1 large Madison point.	Undetermined	Newborn	Undetermined
77	178	Small Basin 2.0x1.05x0.15	None	Undetermined	2±0.5	Gainesville subphase
78A	179	Rectangular Basin	None	Undetermined	3-3.5	Gainesville subphase
78B		3.6x3.05x0.6	1 ground freshwater Goniobasis cf. pupaeformis bead.	Female	25-30	Gainesville subphase
79	180	Rectangular Basin 4.65x2.4x0.75	None	Male	35±	Gainesville subphase
80	189	Small Basin 3.05x2.9x0.45	26 ground marine Marginella apicina beads.	Male	19	Catfish Bend subphase
81	181	Small Basin 2.25x2.2x1.05	None	Undetermined	2.5-3.5	Catfish Bend subphase
82	211	Large Basin 6.4x4.4x1.6	None	Undetermined	3-4	Catfish Bend subphase
83	210	Rectangular Basin 6.3x3.0x2.0	None	Female	40±5	Gainesville subphase
84	219	Rectangular Basin 4.79x2.35x0.7	None	Male	19	Gainesville subphase
85	218	Rectangular Basin 4.05x2.5x0.7	None	Male	30±5	Gainesville subphase
86	225	Small Basin 3.1x2.7x0.6	None	Undetermined	2-3	Catfish Bend subphase

of the site. Gainesville North cemetery was located 7.6 m (25 ft) southwest of a Gainesville subphase rectangular semisubterranean structure, Structure 4, Feature 92, dated to A.D. 1030±55. Another Gainesville subphase structure, Structure 1, Feature 17, dated to A.D. 1240±80 (Jenkins 1981:34 Table 1). This date may be slightly late (Jenkins, this volume, Chapter V) and should be interpreted for its earliest range. These dates suggest a span of approximately 100 years for the Gainesville subphase from A.D. 1000 to A.D. 1100 or slightly later.

The Summerville I Phase Cemetery: Site 1Pi33

A well defined Mississippian cemetery was located on the west-central portion of Site 1Pi33 (Fig. 2) within the Lubbub Creek Archaeological Locality. Other individuals were interred near the cemetery. The individuals interred within the cemetery were arranged in four tenuously defined rows. Most of the burials were made during the Summerville I phase but some burial pits contained later Summerville II or III ceramics (Tab[illegible]). Much of the Mississippian chronology is based on Steponaitis' [illegible]78) seriation of Moundville gravelots. The 19 Summerville I interments [illegible]re considered in this analysis.

MORTUARY ATTRIBUTES

The sex and age distribution of individuals in each of the cemeteries, as well as the distribution of artifacts by sex and age, excluding sherds and projectile points, are summarized in Table 3. The sex, age, direct burial associations, position, and orientation noted for each burial for each cemetery group are described below. The pit typology referenced below was defined by Jenkins (Jenkins and Ensor 1981:6-8). The large and small basins and rectangular pits were probably intentionally excavated burial pits. The straight cylindrical and amorphous compound pits are probably recycled refuse pits based on the recurrence of these pit forms throughout the site as nonmortuary facilities (Jenkins, personal communication 1982). Anomalies and pathologies observed during the osteological analysis are noted. These are further discussed in Hill's section summarizing the osteological analysis.

Catfish Bend Central Cemetery

The Catfish Bend Central cemetery included 18 burials west of the Gainesville North cluster in the north central part of the site (Fig. 1). This group included the interments of three adult males, seven adult females, one other adult of undetermined sex, two young adults (one male and one female), one subadult, two children and two infants (Table 3). No multiple burials were included in this group. Mortuary characteristics of individuals assigned to the Catfish Bend Central cemetery are summarized in Table 4.

Freshwater or marine gastropod shell beads were associated with eight individuals within this group: one adult male, three adult females, both of the male and female young adults, and both of the two children. These

Summerville I Cemetery at Site 1Pi33

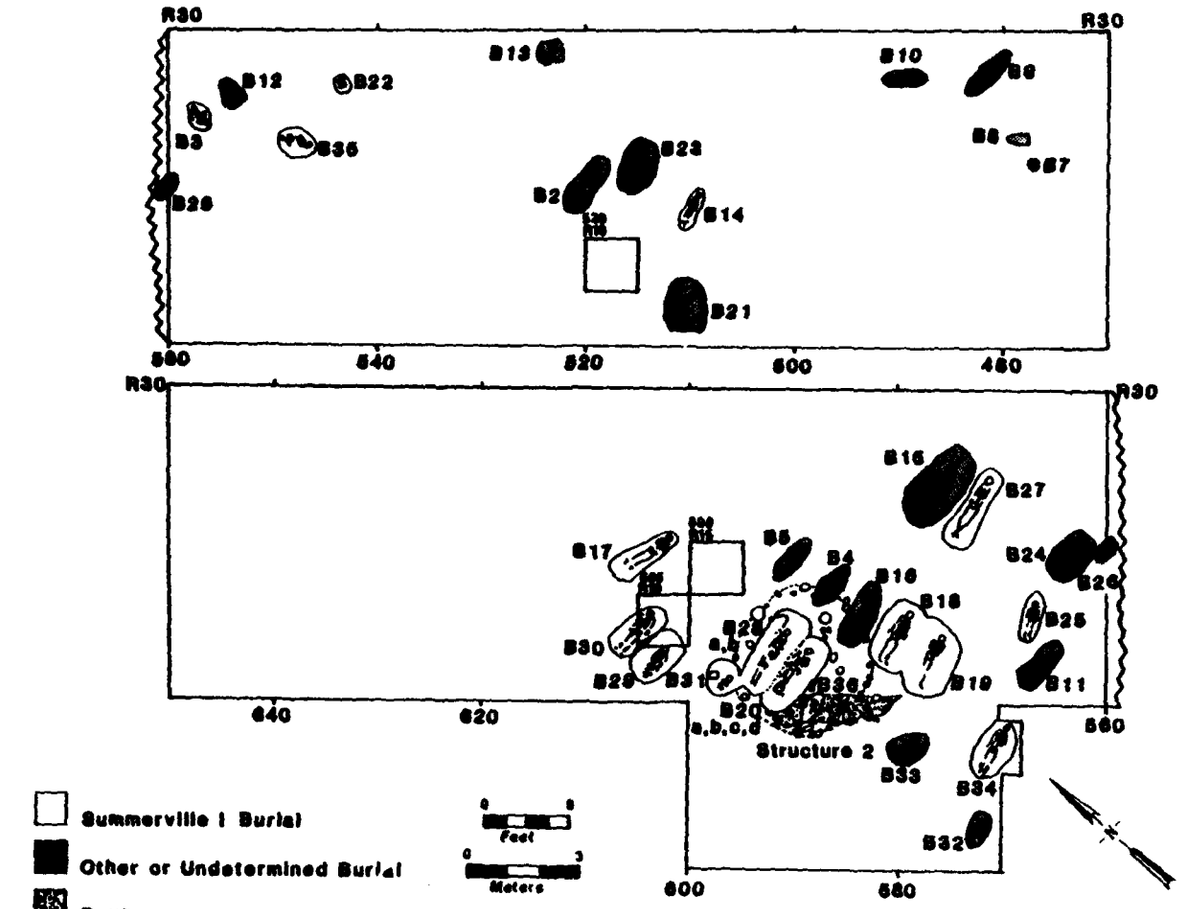


Figure 2.

Table 2. Site 1Pi33: Direct Burial Associations.

Burial Number	Feature Number	Pit Type/ Dimensions (ft)	Associations	Sex	Age (Years)	Cultural Affiliation
1	4	Small Basin 1.5x1.4x0.4	None (Dog).	-	-	Gainesville subphase
2	9	Rectangular Basin 6.5x2.7x0.6	1 bone awl, 37 ground and 2 unground freshwater Goniobasis cf. pupaeformis beads; 19 Marginella apicina beads.	Male?	15	Summerville II or Summerville III
3	10	Large Basin 3.2x2.4x0.3	None	Female	30±5	Summerville I
4	11	Indeterminate 4.2x1.7x-	None	Undetermined	5-10	Undetermined
5	12	Indeterminate 5.1x1.7x-	None	Undetermined	15	Summerville III
6	13	Indeterminate 1.1x0.5x0.6	None	Undetermined	2.5-3.5	Mississippian
7	21	Indeterminate 1.5x1.1x0.1	None	Unknown	Unknown	Undetermined
8	-	-	None	Unknown	Unknown	Undetermined
9	25	Rectangular Basin 5.6x1.7x0.4	None	Unknown	Unknown	Mississippian
10	19	Rectangular Basin 5.1x1.7x0.2	None	Undetermined	30+	Mississippian
11	15	Rectangular Basin 5.3x2.2x0.8	1 shell tempered elbow pipe fragment; 1 unmodified Scotch Bonnet (Phalium granulatum) shell.	Undetermined	2-3	Summerville II or Summerville III
12	16	Indeterminate 3.1x2.2x0.2	None	Female	35±2	Summerville I or Gainesville subphase
13	17	Small Basin 1.0x2.0x0.2	None	Undetermined	10-11	Lafferman or Gainesville subphase
14	20	Rectangular Basin 4.2x1.2x0.5	None	Undetermined	4-5	Summerville I
15	42	Rectangular Basin 8.8x3.8x1.5	1/1 Mississippi Plain var. Warrior vessel; 1 polished greenstone celt with drilled tapered butt.	Male	50+	Summerville II
16	44	Rectangular Basin 6.6x2.5x1.2	1 Mississippi Plain var. Warrior vessel.	Female	30+	Summerville I or Summerville II
17	45	Rectangular Basin 6.2x3.0x0.7	1 large Mississippi Plain var. Warrior body sherd.	Female?	45+	Summerville I
18	46	Rectangular Basin 9.9x3.8x1.4	1 large Mississippi Plain var. Warrior body sherd; 1 sandstone abrader; 5 large Madison projectile points; 5 red ocher fragments; 3 bone awls.	Male?	35±5	Summerville I
19	41	Rectangular Basin 7.7x3.9x2.1	1 amulet made from cougar legbone; 1 double pronged fishhook.	Male	45±5	Summerville I
20A	48	Rectangular Basin	3/4 Moundville Incised var. Moundville vessel;	20A Male?	Adult	Summerville I
20B		9.5x3.8x1.5	1 ground hematite nodule; 1 square copper repousse	20B Male	35	Summerville I
20C			falcon plate; 12 copper "symbol badges"; 1 large	20C Male	35±5	Summerville I
20D			Madison projectile point; 1 galena cube, 52 grams;	20D Undetermined	Adult	Summerville I
			165 cylindrical whelk (Busycon sp.) columella beads; 1 drilled freshwater pearl; 1 pair of human trophy arms; 1 pair of human trophy humer trophy legs; 1 pair of human trophy feet.			
21	22	Rectangular Basin 4.4x3.9x1.0	1 bone awl; 2 drilled black bear canines; 8 ground freshwater Goniobasis cf. pupaeformis beads.	Undetermined	9	Gainesville subphase or Summerville I
22	30	Small Basin 1.9x1.8x0.9	1 large Baytown Plain var. Carry Creek rim sherd.	Undetermined	3.5	Lafferman subphase or Gainesville subphase
23	24	Large Basin 5.4x3.3x1.4	1/2 Mississippi Plain var. Warrior vessel; 1 Bell Plain var. Hale vessel.	Male	30	Summerville I or Summerville II
24	31	Rectangular Basin 5.1x3.2x0.8	1/2 Bell Plain var. Hale vessel; 1 Tallassata quartzite McIntire projectile point; 202 cut, drilled and ground whelk (Busycinidae) or conch (Busycon sp.) columella beads.	Undetermined	9.5-11	Summerville II
25	35	Rectangular Basin 5.1x1.8x0.5	1 Carthage Incised var. Summerville vessel; 1 oval clay bead fragment; 1 Tallahatta quartzite crossed drill; 1 cut and polished longbone object; 16 cut, drilled, and ground cylindrical whelk (Busycinidae) or conch (Busycon sp.) columella beads.	Undetermined	12	Summerville I
26	36	Rectangular Basin 2.5x1.3x0.2	1 drilled and ground whelk (Busycinidae) amulet; 1 unmodified Scotch Bonnet (Phalium granulatum) shell.	Undetermined	3.5	Mississippian
27	43	Rectangular Basin 9.8x2.5x1.5	Thin copper plating, 2 grams; 2 bone awls; 1 antler projectile point; 2 beaver incisor chisels(?); 2 bone objects cut and ground from deer legbone, possibly gouges.	Male	35-40	Summerville I
28A	49	Rectangular Basin	1 complete Mississippi Plain var. Warrior vessel;	Female	15	Summerville I
28B		8.0x3.4x1.0	1 large Moundville Incised var. Carrollton rim sherd; 1 galena cube, 47 grams; 1 drilled and ground disk shaped pendant made from a small marine gastropod.	Male	22-23	Summerville I
29	50	Rectangular Basin 5.4x3.4x1.6	1 copper coated wooden ear plug; 2 bone awls.	Male	45±5	Summerville I
30	52	Rectangular Basin 6.3x3.3x1.6	67 cut, drilled and ground cylindrical shaped whelk (Busycinidae) or conch (Busycon sp.) columella beads.	Female	21-23	Summerville I
31	54	Large Basin 3.6x2.9x0.6	1 composite Moundville Incised var. Moundville vessel; 1 Moundville Incised var. Moundville vessel; 1 cut mammalian longbone; 24 cut, drilled, and ground whelk (Busycinidae) or conch (Busycon sp.) columella beads; 1 ground dipper whelk.	Undetermined	1.5-2.5	Summerville I
32	55	Rectangular Basin 3.6x1.9x0.4	None	Undetermined	3-4	Gainesville subphase
33	56	Rectangular Basin 4.0x2.6x1.2	None	Female	28-30	Gainesville subphase or Summerville I
34	57	Rectangular Basin 6.1x3.3x1.3	None	Female	45-50	Summerville I
35	59	Indeterminate 3.0x2.9x1.0	None	Male	15	Summerville I
36	60	Rectangular Basin 3.1x1.8x1.0	1 large ceramic discoidal.	Undetermined	Newborn	Summerville I

*See Larson (1959).

Table 3. Sex and Age Distribution of Individuals Interred in Miller III and Summerville I Cemeteries.

Sex and Age Class	Years	Site 1Pi61 Catfish Bend Central +	–	T*	Catfish Bend West +	–	T	Catfish Bend South +	–	T	Gainesville North +	–	T	Gainesville South +	–	T	Site 1Pi33 Summerville I +	–	T
Adult Male	21+	1	2	3	–	4	4	–	2	2	1	3	4	2	4	6	9	–	9
Adult Female	21+	3	4	7	1	3	4	–	3	3	2	1	3	–	2	2	1	3	4
Adult Undetermined	21+	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–
Young Adult Male	16–20	1	–	1	–	–	–	–	1	1	1	–	1	–	–	–	–	–	–
Young Adult Female	16–20	1	–	1	1	1	2	–	3	3	–	–	–	–	1	1	1	–	1
Subadult	10–15	–	1	1	–	–	–	–	–	–	2	1	3	–	–	–	1	1	2
Child	2–10	2	–	2	–	6	6	–	2	2	1	2	3	1	1	2	–	1	1
Infant	0–1	–	2	2	–	–	–	–	–	–	–	4	4	2	1	3	2	–	2
TOTAL		8	10	18	2	14	16	–	11	11	7	12	19	5	9	14	14	5	19

* Mortuary artifacts excluding projectile points and sherds. + Number of individuals with associated artifacts. – Number of individuals without associated artifacts. T Total number of individuals in each sex and age class.

Table 4. Catfish Bend Central Burial Summary: Site 1Pi61 (n=18).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
1	U	Child	1.5-2.0	47 Goniobasis shell beads, 62 disk shell beads, 3 cylindrical shell beads, 2 rectangular shell beads.	Semiflexed on side.	Large Basin	NW	Cribra orbitalia.
3	F	Adult	40+	None	Fully Flexed on side.	Small Basin	SE	Degenerative and severe dental pathologies, accidental trauma.
8	F	Adult	25+	1 Madison projectile point, 52 Goniobasis shell beads.	Semiflexed on side.	-	W	Osteomyelitis, possible mycetoma.
15	F?	Adult	30+	None	Fully Flexed on side.	Small Basin	NE	Cribra parietalis, severe dental pathologies.
21	U	Infant	9-12 mo	None	Flexed on side.	Indeterminate	Disturbed	-
22	U	Adult	25+	None	Flexed on side.	Small Basin	SE	-
23	F	Adult	30+5	2 Goniobasis shell beads, 16 disk shell beads, 34 Marginella shell beads, 2 cylindrical shell beads, 2 shell pendants.	Flexed on side.	Large Basin	S	Possible systemic infection.
24	M	Adult	35-45	None	Flexed on back.	Small Basin	NW	Nonaccidental trauma, possible systemic infection, severe dental pathologies.
37	U	Subadult	-	None	?	Amorphous	NE/SW	-
39	F	Adult	31-35	None	Flexed on side.	Large Basin	SE	Possible trauma.

Table 4. Catfish Bend Central Burial Summary: Site 1Pi61 (n=18) (Continued).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
58	U	Child	10	266 Goniobasis shell beads, 26 disk shell beads, 2 cylindrical shell beads	Flexed on back.	Large Basin	ENE	Cribra orbitalia, possible systemic infection.
59	F	Young Adult	21	1142 Goniobasis shell beads.	Seated.	Straight Cylindrical	Seated	-
60	F	Adult	30+	8 disk shell beads.	Flexed on side.	Large Basin	N	Porotic hyperostosis, possible trauma or congenital defect, severe dental pathologies.
68	M	Adult	25+	None	Extended(?) ventral.	Large Basin	W	Degenerative pathologies.
71	F	Adult	30+5	None	Flexed on side.	Large Basin	NE	Accidental trauma, systemic infection.
72	U	Infant	0-6 mo	None	Extended on back.	Small Basin	S	Systemic infection.
73	M	Adult	45+5	2 Goniobasis shell beads.	Flexed on side.	Large Basin	WNW	Osteomyelitis, degenerative and severe dental pathologies, porotic hyperostosis.
80	M	Young Adult	19	26 Marginella shell beads.	Fully flexed on side.	Small Basin	S	-

artifacts are interpreted as necklaces, bracelets and clothing or hair ornaments, such as beaded headband of Burial 1 (Curren 1981, Table 11). Burial 8, an adult female, included one projectile point in addition to 52 Goniobasis shell beads. This was one of two burials at Site 1Pi61 that included projectile points not recovered within the body of the interred individual, but it seems unlikely that the projectile point was intended as a mortuary artifact. Burial 59, the seated burial of a young adult woman (age 21) which had been placed in a refuse pit, was undoubtedly the most elaborate burial within this group--the 1142 Goniobasis shell beads associated with this individual are probably the remains of a beaded garment (Curren 1981). Adjacent Burials 8 and 23 were similarly elaborate adult females with quantities of shell beads.

Burial position was flexed or semiflexed on side for most individuals (12 of 18 or 66.6 percent). Two were flexed on back. Two were extended, one supine and one ventral. One was buried in a seated position and one was undetermined. Most individuals (14 or 77.8 percent) were buried in large or small basin pits. Three pits were irregular or of undetermined shape. The straight cylindrical pit of the seated Burial 59 was probably a refuse pit based on the recurrence of this pit shape as nonmortuary refuse container throughout the site. The varied orientation of individuals in this cemetery shows no consistent pattern.

Anomalies and pathologies noted for the Catfish Bend Central interments include infection (7), trauma (5), dental pathologies (5), porotic hyperostosis (5), and degenerative pathologies (3). One instance of nonaccidental trauma was noted (Burial 24). The extended ventral Burial 68 and the seated Burial 59 which had been placed in a straight sided cylindrical refuse pit are probably anomalous interments. The skull of Burial 68, an adult male, was possibly removed as the site was graded but the arms and lower legs had apparently been deliberately removed. Only the femora, patellae, pelvis, vertebrae, and ribs remained. The large basin shaped pit of Burial 68 was probably a deliberately excavated burial facility. Burial 59 had been placed in a seated position with the arms folded, the legs flexed feet-to-hips. The cranium was in the individual's lap.

Catfish Bend West Cemetery

The 16 individuals assigned to the Catfish Bend West cemetery comprised a loose cluster in the northwestern part of the site (Fig. 1). Included within this group were four adult males, four adult females, two young adult females, and six children (Tables 3 and 5). Burial 35, an adult male; Burial 55, an adult female; and four children (Burials 40, 70A, and 70B, and possibly Burial 32) may constitute a family cluster based on the composition, spatial proximity, trauma, and pathologies noted for this group of individuals. Two multiple burials were included in the Catfish Bend West group. Burials 61A, 61B, and 61C were an adult male and female and a 7 to 9 year old child interred within the same pit. Burials 70A and 70B were two children interred within the same pit.

Three individuals, Burials 28, 35, and 55, within this group had associated artifacts. One projectile point was embedded in the chest of

Table 5. Catfish Bend West Burial Summary: Site 1Pi61 (n=16).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
6	F?	Older Adult	-	None	Semiflexed on side.	-	N	Degenerative pathologies.
14	M?	Adult	-	None	Fully flexed on side.	-	NW	Degenerative pathologies.
25	M	Adult	35+	None	Flexed on side.	Large Basin	NEE	Accidental trauma, degenerative pathologies.
28	F	Young Adult	16	1295 Goniobasis shell beads, 1 marine gastropod disk bead, 103 drilled freshwater Anculosa cf. brevispira beads, 1 drilled marine gastropod triangular pendant.	Seated.	Large Basin	Seated	-
32	U	Child	8+1	None	Fully flexed on side.	Straight Cylindrical	E	Cribra orbitalia, possible systemic infection.
33	F	Adult	30±5	None	Flexed on side.	Large Basin	W	-
35	M	Adult	35	1 Madison projectile point (in chest).	Flexed on side.	Large Basin	ESE	Trauma, degenerative and severe dental pathologies.
36	F	Young Adult	19-22	1 projectile point (unidentified)	Flexed on back.	Small Basin	NE	Possible tuberculosis, trauma.
40	M?	Child	9-11	None	Flexed on back.	Small Basin	N	-
55	F	Adult	35+5	4 projectile points, (1 Madison, 1 Hamilton, 2 unidentified), 6 shell beads, 1 shell pendant.	Flexed ventral.	Small Basin	WSW	Nonaccidental trauma, degenerative pathologies.

Table 5. Catfish Bend West Burial Summary: Site 1Pi61 (n=16) (Continued).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
61A	M	Adult	-	1 projectile point (unidentified).	Flexed on side.	Straight Cylindrical	NE	Nonaccidental trauma.
61B	F	Adult	-	None	(?)	-	Disturbed	Nonaccidental trauma.
61C	U	Child	7-9	None	(?)	-	Disturbed	Nonaccidental trauma.
70A	U	Child	6-7	None	Flexed on side.	Large Basin	NE	Cribra orbitalia, osteomyelitis, systemic infection.
70B	U	Child	3-4	None	Flexed on side.	-	NE	Cribra orbitalia, osteomyelitis, systemic infection.
81	U	Child	2.5-3.5	None	Flexed on side.	Small Basin	NE	Cribra orbitalia, systemic infection.

Burial 35, an adult male. Four projectile points were associated with Burial 55, an adult female interred 1.5 m (5 ft) southeast of Burial 35. Six marine gastropod shell beads and one marine gastropod shell pendant were also associated with Burial 55. A total of 1399 shell beads and one shell pendant was associated with Burial 28, the seated burial of a young woman which had been placed in a large basin shaped pit. Burial 28 was the most elaborate burial within this group. The numerous beads associated with this individual are probably the remains of a beaded garment and necklace (Curren 1981).

The majority (10 of 16 or 62.5 percent) of the Catfish Bend West interments were flexed on side. Two were flexed on back, one was flexed ventral, one was seated, and two were undetermined.

The majority (9 out of 13) of the Catfish Bend West burial pits were large or small basins. The form of two pits was undetermined. Two straight cylindrical refuse pits contained the multiple Burial 61 of three individuals and the child Burial 32. Six of the Catfish Bend West interments were oriented toward the northeast, but the variability of orientation suggests an unpatterned distribution.

Anomalies and pathologies noted for the Catfish Bend West interments include trauma (6), infection (6), degenerative pathologies (5), cribra orbitalia (4), possible tuberculosis (1), and severe dental pathologies (1).

Four instances of nonaccidental trauma were noted among the Catfish Bend West interments for Burials 35, 36, 55, and 61A. Projectile points were recovered during the osteological analysis of all four of these burials.

The flexed ventral interment was that of Burial 55, an adult female. The body, with no cranium, had been placed in a shallow pit on the stomach with the hands behind the neck, knees flexed with feet in back of the ribs as if they had been tied in that position. Three projectile points were recovered from the thoracic region and chest. A fourth projectile point which had entered from the dorsal side, had penetrated the right ilium (Hill 1981:316, 238 Fig. 6).

Burial 55 was interred in a small basin shaped pit 1.5 m (5 ft) southeast of Burial 35, an adult male. A projectile point was recovered near the thoracic vertebrae of Burial 35. A projectile point was also recovered from the chest area of Burial 36, a young female buried in a small basin shaped pit 3.0 m (10 ft) northwest of Burial 35. Still another projectile point was recovered during the ostelogical analysis of the multiple Burial 61. Burial 61A exhibited evidence of nonaccidental trauma. Burial 61 included an adult male and female and a child, all placed in a straight cylindrical refuse pit.

Burial 28 was the elaborate interment of a young woman placed in seated position in the center of a large basin shaped pit which had probably been intentionally prepared as a burial facility. Three post holes were encountered at the base of the pit which appear to be the remains of posts that had extended behind the individual. The entire burial was

covered with hundreds of cut gastropod beads and these were also recovered from the central post hole fill. The base of the pit directly beneath the burial had been fired. The arrangement suggests that Burial 28 had been placed against a framework supported by three posts within the pit. No evidence of firing was noted on the skeletal remains.

Catfish Bend South Cemetery

Most of the 11 burials assigned to the Catfish Bend phase were clustered near Structure 5 in the southern part of the site. Two young adult females, Burials 46 and 47, were interred under the floor of this structure. Burials 26, 82 and 86 were dispersed throughout the southern part of the site. Their proximity to Gainesville subphase burials suggests that these three interments may be Gainesville subphase burials that did not happen to include shell tempered pottery. Individuals assigned to the Catfish Bend South cemetery include two adult males, three adult females, four young adults, (three females and one male?) and two children. No multiple burials were included in this group (Table 6).

None of the individuals assigned to this group had associated artifacts. Seven of the Catfish Bend South interments were flexed on side, three were flexed on back and was extended on back. Six of the interments were in large or small basins, two young adult females were interred under the floor of Structure 5. Two interments, Burials 26 and 53, had rectangular basin burial pits. The pit shape of one interment was undetermined. Except for the two interments under the floor of Structure 5, burial facilities appear to have been intentionally prepared for all burials within this group. The Catfish Bend interments were oriented north (4) northwest (2), northeast (1), southeast (2), or southwest (2) suggesting no particular pattern of orientation.

Anomalies and pathologies for Catfish Bend South interments include trauma (4), degenerative pathologies (4), infection (3), porotic hyperostosis (3), dental pathologies (2), and possible tuberculosis (1). Nonaccidental trauma was noted for only one individual within this group. A healed fracture of the left ulna was noted for Burial 11.

Gainesville North Cemetery

Individuals assigned to the Gainesville North cemetery include 11 burials clustered within a 6.1 m (20 ft) diameter area southwest of Structure 4 in the northeastern part of the site and eight other burials dispersed throughout the northern half of the site (Fig. 1).

The cluster includes four pairs of adult female and child or infant burials: Burials 16A and 16B, Burials 30 and 64, Burials 78A and 78B, and Burials 75 and 77. An adult male, Burial 79; a subadult male (?), Burial 67; and a young adult male, Burial 56; were also included within this cluster. Isolated burials in the northern part of the site include Burials 2, 9, 31, 34, 56, 63, 66A and 66B. Burials 66A and 66B were a child and subadult some 10.7 m (35 ft) west of the main burial cluster. Another subadult, Burial 19, and an adult male, Burial 2, were dispersed among the

Table 6. Catfish Bend South Burial Summary: Site 1Pi61 (n=11).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
5	F	Adult	25-35	None	Flexed on side.	-	N	Degenerative pathologies.
11	F	Adult	30+	None	Flexed on back.	Small Basin	N	Nonaccidental trauma, degenerative pathologies.
17	F?	Young Adult	15-17	None	Fully flexed on side.	Large Basin	SE	-
26	M	Adult	25-35	None	Flexed on side.	Rectangular Basin	SE	Cribra occipitalis, degenerative pathologies.
46	F	Young Adult	20+2	None	Flexed on side.	Structure 5	NNW	Possible systemic infection, Gaucher's disease or osteopetrosis.
47	F	Young Adult	20	None	Flexed on side.	Structure 5	N	-
52	F	Adult	25+	None	Flexed on side.	Large Basin	NE	Accidental trauma, degenerative and severe dental pathologies.
53	M?	Adult	30	None	Flexed on on side.	Rectangular Basin	N	Accidental trauma, severe dental pathologies.
54	M?	Young Adult	19+2	None	Flexed on back.	Large Basin	SSW	Accidental trauma, possible tuberculosis, possible porotic hyperostosis.
82	U	Child	3-4	None	Extended ?	Large Basin	E	Possible infection.
86	U	Child	2-3	None	Flexed on back.	Small Basin	SW	Porotic hyperostosis, systemic infection.

Catfish Bend Central cemetery burials. Burial 31, an adult of undetermined sex, was near the far eastern boundary of the site--some 16.8 m (55 ft) southeast of the main cluster. Burial 63, an adult male, was 7.6 m (25 ft) north of the main cluster. Burial 34, an adult male, and Burial 56, a young adult male, were near the northwestern periphery of the site. Burials 16A and 16B, 66A and 66B, 78A, and 78b were three multiple burials consisting of two individuals in each instance (Table 7).

Of the 19 burials assigned to the Gainesville North cemetery seven had artifact associations (Burials 2, 16A, 19, 56, 66A, 66B, and 78B). Freshwater Goniobasis or marine gastropod Marginella shell beads were included in all of these burials: one adult male, two adult females, one young adult male (?), two subadults and one child. None of the four infants in this group had associated artifacts. Burial 19, a subadult, was interred with one greenstone celt in addition to 395 Marginella shell beads and may be considered the most elaborate interment within this group. Burial 19 had the only nonshell mortuary association within the Gainesville North cemetery.

Of the 19 Gainesville North interments 13 were flexed on back and four were flexed on side. One undetermined and one possible reburial were noted. The possible reburial, Burial 31, included only cranial and long-bone fragments in a rectangular pit.

Six rectangular basins, seven small or large basins, and three other pit types were noted for the Gainesville North burials. Burial 19 had been placed in a shallow pit. Its shape could not be determined because of grader damage. Burial 30 was encountered in the midden with no discernable pit. Burial 63 had been placed within a bell shaped storage pit. The rectangular basins may have been intentional burial pits. The majority (13 of 19) of the Gainesville burials were oriented northeast or east two were oriented southeast, one was oriented south, and the orientation of three was undetermined.

Anomalies and pathologies for the Gainesville North group include infection (11), porotic hyperostosis (11), trauma (7), degenerative pathologies (5), and severe dental pathologies (3). Of the seven instances of trauma noted for this group only one was described as nonaccidental. A healed fracture of the left radius was noted for Burial 34.

Gainesville South Cemetery

Fourteen individual burials dispersed throughout the southern portion of Site 1Pi61 were assigned to the Gainesville subphase. This group included four isolated infant or child burials: Burials 4, 45, 49, and 50. Burial 4 included two individuals, a child and an infant. Burial 45 was that of an infant placed in a shallow oval pit in the floor of Structure 3 after its construction. Burial 49, an infant, and Burial 50, a child, were in isolated shallow pits. Three groups of adult burials were included in the Gainesville South analysis. Burials 27, 48, and 51, are the interments of three adult males in separate pits. Burials 83, 84, and 85 are two females and one male in separate pits. Burials 42, 43, and 44 are

Table 7. Gainesville North Burial Summary: Site 1P161 (n=19).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
2	M	Adult	30+5	19 shell beads.	Fully flexed on side.	Large Basin	S	Accidental trauma, degenerative pathologies.
16A	F	Adult	20-28	2 Marginella beads.	Flexed on back.	Large Basin	ESE	Accidental trauma, porotic hyperostosis.
16B	U	Infant	6-9 mo	None	-	-	-	Porotic hyperostosis, infection.
19	U	Subadult	10-11	1 greenstone celt, 395 Marginella beads.	Semiflexed on side.	Indeterminate	E	Cribra orbitalia, possible systemic infection or osteopetrosis.
30	F	Adult	35+	None	Flexed on back.	In midden	ENE	Accidental trauma, degenerative pathologies.
31	U	Adult	-	None	Possible reburial.	Rectangular Basin	NE/SW	Possible porotic hyperostosis.
34	M	Adult	50+	None	Flexed on side.	Small Basin	E	Accidental trauma, degenerative pathologies, systemic infection.
56	M?	Young Adult	19±2	32 shell beads	Flexed on back.	Rectangular Basin	ENE	Accidental trauma, systemic infection.
63	M	Adult	35+	None	Semiflexed on back.	Large Bell	ESE	Accidental trauma, degenerative and severe dental pathologies, cribra orbitalia.

Table 7. Gainesville North Burial Summary: Site 1Pi61 (n=19) (Continued).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
64	F?	Child	8-9	None	Flexed on back.	Rectangular Basin	E	Cribra orbitalia.
66A	U	Child	2-3	5 Goniobasis beads.	Semiflexed on back.	Large Basin	Disturbed	Possible infection.
66B	M?	Subadult	10-15	17 Goniobasis beads, 45 Marginella beads.	Flexed on side.	-	E	-
67	M?	Subadult	13-14	None	Flexed on back.	Rectangular Basin	ENE	Possible infection.
74	U	Infant	9-12 mo	None	Extended on back.	Small Basin	ENE	Possible infection.
75	U	Fetus	(9 mo)	None	Flexed on back.	Small Basin	E	Porotic hyperostosis, systemic infection.
77	U	Infant	1.5-3.5	None	Flexed on back.	Small Basin	E	Porotic hyperostosis, systemic infection.
78A	U	Child	3-3.5	None	Semiflexed on back.	Rectangular Basin	ENE	Porotic hyperostosis, systemic infection, severe dental pathologies.
78B	F	Adult	25-30	1 Goniobasis bead.	Semiflexed on back.	-	ENE	Accidental trauma, porotic hyperostosis, severe dental pathologies.
79	M	Adult	35+	None	Semiflexed on back.	Rectangular Basin	ENE	Osteomyelitis, porotic hyperostosis, degenerative and severe dental pathologies.

multiple burials of three adult individuals, two males and one female, in a single rectangular pit. Two multiple burials, Burial 4A and 4B, and Burials 42, 43, and 44 were included in this group (Table 8).

Artifacts were associated with five of the 14 Gainesville South cemetery interments. Shell beads were associated with the multiple infant-child Burial 4; with an adult male, Burial 27; and with an infant, Burial 49. Shell pendants were also included with the shell beads of Burials 4 and 27. A greenstone celt and two drilled black bear canines were associated with Burial 27 in addition to 493 shell beads and a shell pendant. The bear canines were recovered near the drilled shell pendant, suggesting that these were part of a necklace. Two turtle shells were recovered with the adult male, Burial 48. Burials 27 and 48 were the only individuals who had nonshell artifact associations. Burial 27, an adult male, was interred within a ring of mussel shell (Fig. 1) together with Burial 26, also an adult male, and Burial 86, a child. Burials 26 and 86 were assigned to the Catfish Bend subphase because no shell tempered pottery was recovered from either burial. Burial 48 was interred adjacent to Burial 51 just southwest of the shell ring. Burials 48 and 51 were both adult males and both show evidence of osteomyelitis--the only two instances noted among the Gainesville South interments.

Of the 14 Gainesville South interments nine were flexed on back, one was flexed on side, two were extended and the burial positions of two were undetermined. All of these burials were in rectangular basin burial pits, except Burial 4 whose pit was damaged by excavation equipment, and Burials 45, 48, and 51 whose pits were typed as large basins. Nine of the 14 Gainesville South interments were oriented southeast; four were oriented respectively toward the east, northwest, south, and southwest; and one was undetermined.

Anomalies and pathologies noted for the Gainesville South interments include infection (11), trauma (5), degenerative pathologies (5), severe dental pathologies (4), and porotic hyperostosis (3). Evidence of infection was noted for four of the five infant-child burials in this group. Of the five instances of trauma noted for this group, only one was described as nonaccidental (Table 6). Healed fractures of the left ulna and radius were noted for Burial 43.

Summerville I Cemetery

The Summerville I mortuary population at Site 1Pi33 consists of 19 individuals representing 15 separate burial events (Fig. 2). These included eight adult males, four adult females, one adult of undetermined sex, one young adult female, two subadults, one child, and two infants (Table 9). Burials 20 and 28 encompassed the multiple interments of six adult individuals. Four of these, Burials 20A, 20B, 20C, and 20D, were two adult males and parts of two other individuals interred within a single large rectangular pit. The Burial 20 pit was intruded by the pit of Burial 28. Burials 28A and 28B in the same pit, and Burials 29 and 30 in adjacent pits are male and female pairs. Burial 31, an infant, was in a small pit near the foot of Burials 28A and 28B. Burials 18 and 19, two adult males, were in adjacent pits 1.2 to 2.4 m (4 to 8 ft) east of Burial

Table 8. Gainesville South Burial Summary: Site 1Pi61 (n=14).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
4A	U	Child	6-7	9 Goniobasis beads, 38 Marginella beads.	Flexed on side.	In Midden	S?	Possible systemic infection.
4B	U	Infant	1-2	19 disk shell beads, 1 cylindrical shell bead, 1 triangular shell pendant.	-	In Midden	-	-
27	M	Adult	25-35	1 greenstone celt, 425 Goniobasis shell beads, 1 disk marine shell bead, 67 Marginella shell beads, 1 triangular shell pendant, 2 Black Bear canines, drilled.	Semiflexed.	Rectangular Basin	NW	Degenerative pathologies.
42	M	Adult	50+	None	Semiflexed on back.	Rectangular Basin	SE	Accidental trauma, degenerative and severe dental pathologies, infection.
43	M	Adult	45+5	None	Semiflexed on back.	-	SE	Nonaccidental trauma, degenerative and severe dental pathologies, cribra occipitalis, possible infection.
44	F	Adult	35+	None	Semiflexed on back.	-	SE	Degenerative and severe dental pathologies, porotic hyperostosis, systemic infection.

Table 8. Gainesville South Burial Summary: Site 1Pi61 (n=14) (Continued).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
45	U	Infant	0-2 mo	None	Semiflexed on back.	Large Basin	ESE	Systemic infection.
48	M	Adult	30+	2 turtle shells.	Flexed on back.	Large Basin	SE	Osteomyelitis, cribra parietalis.
49	U	Infant	1	47 disk shell beads, 5 cylindrical shell beads.	Extended.	Rectangular Basin	SE	Possible systemic infection.
50	F?	Child	9-10	None	Flexed on back.	Rectangular Basin	ESE	Systemic infection.
51	M	Adult	35+	None	Flexed on back.	Large Basin	SE	Osteomyelitis.
83	F	Adult	40±5	None	Extended.	Rectangular Basin	E	Trauma, degenerative pathologies, possible infection, severe dental pathologies.
84	F	Young Adult	19±2	None	Semiflexed on back.	Rectangular Basin	SW	Possible accidental trauma.
85	M	Adult	30+5	None	Semiflexed on back.	Rectantular Basin	SE	Accidental trauma, infecton.

20. Burial 36, an infant, was in a small pit, just south of Burial 20. Burials 3 and 35 are an adult female and subadult male, both oriented south and in a flexed or semiflexed burial position near the northern edge of the recovery strip outside of the main burial cluster. Structure 2 encompassed Burials 20, 28, and 36 (Jenkins and Ensor 1981:89).

Of 19 individuals assigned to the Summerville I phase at Site 1Pi33, 14 had associated mortuary artifacts: eight adult males, one adult of undetermined sex (Burial 20D), two adult females, one subadult, and two infants. Three adult females, one subadult, and one child had no associated artifacts other than sherds that probably do not represent mortuary vessels. Sherds in direct burial association that did not comprise complete vessels were not enumerated in this analysis. Some occurrences of large sherds (Table 1) were, however, placed near the head of individuals in the 1Pi33 cemetery, suggesting that the sherds may have been intended as mortuary associations (Jenkins, personal communication 1982). Of the five individuals without artifacts, three (Burials 3, 14, and 35) were in the northern part of the site and not within the cemetery cluster. Burials 17 and 34, two adult women, were the only interments within the cluster without associated artifacts (Table 9).

The two adult women with associated mortuary artifacts were Burial 28A, whose pit contained a Moundville Plain var. Warrior vessel, and Burial 30, who wore whelk or conch shell beads. A double composite bowl vessel was associated with the infant Burial 31 (Jenkins 1981, Fig. 62). The remaining burials contained a wide variety of artifacts.

The major artifact categories may be classified by type as follows. Burial numbers are in parentheses ( ):

Bone and shell: bone awls (18) (27) (29), cougar bone amulet (19), double pronged fishhook (19), whelk or conch shell beads (20) (25) (30) (31), marine shell pendant (28B), whelk dipper (31), freshwater pearl (20), non-person arms, legs, and feet, Burials 20A and 20D (20), bone object (25) (27) (31), antler projectile point (27), beaver incisors (27).
Ceramic vessels: Moundville Incised var. Moundville (20) (31), Carthage Incised var. Summerville (25), Moundville Plain var. Warrior (15) (28).
Other ceramics: clay bead (25), ceramic disc (36).
Copper: repousse falcon plate (20), 12 copper symbol badges (20), sheet copper fragment (27), copper covered earplug (29).
Stone: sandstone abrader (18), Madison projectile points (18) (20), stemmed drill (25).
Mineral: red ochre (18), hematite (20), galena cube (20) (28B).

Thirteen of the 19 Summerville I interments at Site 1Pi33 were extended on back, two were flexed on back, one was flexed on side, and three were undetermined. Twelve of the 15 Summerville I burial pits were rectangular basins, two were large basins and the shape of one was undetermined. Of the 19 Summerville I interments, 15 were oriented east, two were oriented south, one was oriented southeast, and one was undetermined.

Anomalies and pathologies noted for the Summerville I interments at Site 1Pi33 include severe dental pathologies (6), infection (5), degenerative pathologies (4), trauma (3), porotic hyperostosis (2), and develop-

Table 9. Summerville I Burial Summary: Site 1Pi33 (n=19).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
3	F	Adult	30+5	None	Flexed.	Large Basin	S	Osteomyelitis, severe dental pathologies.
14	U	Child	4-5	None	Extended.	Rectangular Basin	E	Systemic infection, cribra orbitalia.
17	F?	Adult	45+5	*	Extended.	Rectangular Basin	SE	Degenerative and severe dental pathologies.
18	M?	Adult	35+5	*1 sandstone abrader, 5 Madison projectile points, 5 red ochre fragments, 3 bone awls.	Extended.	Rectangular Basin	E	Severe dental pathologies.
19	M	Adult	45+5	1 cougar bone amulet, 1 double pronged fishhook.	Extended.	Rectangular Basin	E	Degenerative pathologies.
20A	M?	Adult	-	3/4 Moundville Incised var. Moundville vessel,	-	Rectangular Basin	E	-
20B	M	Adult	35	1 ground hematite nodule, 1 reposse falcon plate, 12 copper symbol badges **,	Extended.	-	E	Nonaccidental trauma (projectile point in chest).
20C	M	Adult	35	1 Madison projectile point, 1 galena cube.	Extended.	-	E	Osteomyelitis.
20D	-	Adult	-	165 whelk or conch shell beads, 1 drilled freshwater pearl, trophy arms, legs, and feet, (Burials 20A and 20D).	-	-	-	-
25	U	Subadult	12	1 Carthage Incised var. Summerville vessel, 1 oval clay bead fragment, 1 stemmed drill, quartzite, 1 cut and polished bone object, 14 whelk or conch shell beads.	Extended.	Rectangular Basin	E	-

Table 9. Summerville I Burial Summary: Site 1Pi33 (n=19) (Continued).

Burial	Sex	Age		Associations	Position	Pit Type	Orientation	Anomalies and Pathologies
27	M	Adult	35-40	1 sheet copper fragment, 2 bone awls, 1 antler projectile point, 2 beaver incisors (chisels), 2 deer bone object, cut and ground.	Extended.	Rectangular Basin	E	Possible accidental trauma, systemic infection, severe dental pathologies.
28A	F	Young Adult	15	1 Moundville Plain var. Warrior vessel.	Extended.	Rectangular Basin	E	-
28B	M	Adult	21-23	*1 galena cube, 1 marine gastropod shell pendant.	Extended.	-	E	-
29	M	Adult	45+5	1 copper covered ear plug, 2 bone awls.	Semiflexed on back.	Rectangular Basin	E	Accidental trauma, degenerative and severe dental pathologies.
30	F	Adult	21-23	67 whelk or conch shell beads.	Extended.	Rectangular Basin	E	-
31	U	Infant	1.5-2.5	2 Moundville Incised var. Moundville vessels, 1 cut longbone, 24 whelk or conch shell beads, 1 whelk dipper.	Flexed on back.	Large Basin	E	Systemic infection, porotic hyperostosis.
34	F	Adult	45-50	None	Extended.	Rectangular Basin	E	Degenerative and severe dental pathologies.
35	M	Subadult	15	None	Semiflexed on side.	Indeterminate	S	Developmental pathologies.
36	U	Newborn	0.0	1 large ceramic disc.	Extended.	Rectangular Basin	E	-

* Sherds recorded in burial association, See Table 1.
** The term symbol badges was suggested for these artifacts by Larson (1959).

mental pathologies (1). Only one instance of nonaccidental trauma was noted. A projectile point was recovered from the chest of Burial 20B. Copper artifacts specifically associated with this individual bore Southern Cult motif symbols marking a status of exceptionally high rank.

At Site 1Pi33, Summerville I Burials 3, 35, and 14 were outside of the main burial cluster and characteristics of Burials 3 and 35 were at variance with the remainder of the Summerville I mortuary population. Both were flexed and oriented south. The later excavations at the Lubbub Creek Archaeological Locality demonstrate that these interments exhibit characteristics well within the range of other Summerville I interments on the bend.

Fourteen other Summerville I burials were recovered during the University of Michigan excavations at the Lubbub Creek Archaeological Locality (Powell 1981:457). Six of these clustered near the northwest corner of Hectare 500N-300E had associated ceramic vessels. The remaining eight burials were dispersed and only one of these, an infant with a large bone pin, included mortuary artifacts.

The fourteen Summerville I burials excavated elsewhere within the Lubbub Creek Archaeological Locality by the University of Michigan were single primary interments in shallow oval pits oriented east (7), southeast (3), east-southeast (1) northeast (1) and north (1) and unknown (1). Burial positions were extended (6), semiflexed (3) more tightly flexed (3) and undetermined (2) (Powell 1981:457-472 ff.).

The later excavations suggest that the Summerville I cemetery at Site 1Pi33 (one of the sites included within the Lubbub Creek Archaeological Locality) was a spatially segregated cemetery of elite burials.

Mortuary characteristics of the entire Summerville I population, including those dispersed throughout the Lubbub Creek Archaeological Locality indicate two distinct social groups are represented. Burial position and orientation shows more variability for those dispersed throughout the bend, but an extended burial position and an eastern orientation is dominant for the entire population. The Summerville I burial cluster at Site 1Pi33 is distinguished by the uniformity of the extended burial positions, by orientations to the east, and by rectangular basin burial pits. The use of recycled midden pits was not noted for any of the Summerville I interments. The main distinctive characteristics of the Summerville I cemetery are, however, its spatial segregation, exotic copper, galena, whelk and conch shell artifacts, and the association of Southern Cult motif artifacts with Burial 20 and other artifacts of extralocal significance recovered with several individuals in this group.

Discussion

The mortuary characteristics described in detail in the preceding section are summarized below to facilitate comparisons of the Catfish Bend, Gainesville, and Summerville I mortuary populations.

Sex and Age Distribution

The sex and age data presented in Table 3 for the separate cemeteries are summarized by subphase categories in Table 10.

Table 10. Sex and Age Distribution of Catfish Bend, Gainesville, and Summerville I Mortuary Populations.

	Catfish Bend		Gainesville		Summerville I	
	n	%	n	%	n	%
Male	11	24.44	11	33.33	8	42.11
Female	20	44.44	6	18.18	5	26.32
Undetermined	1	2.22	1	3.03	1	5.26
Subadult	1	2.22	3	9.09	2	10.53
Infant-Child	12	26.67	12	36.36	3	15.79
TOTALS	45	99.99	33	99.99	19	100.01

As shown in the table, adult females comprised by far the largest portion of the Catfish Bend group. Infants and children comprised the largest portion of the Gainesville group. Adult males comprised the largest portion of the Summerville I group. The disporportionate number of adult males in the Summerville I cemetery reflects the three adult males (15.79 percent) in multiple Burial 20. The biological implications of this mortality pattern among the Catfish Bend, Gainesville, and Summerville I groups are explored in Hill's osteological analysis in a later section.

Artifact Associations

Projectile Points

Sixteen projectile points were recovered in association with burials at Site 1Pi61 (Table 1). One was recovered from Catfish Bend Central Burial 8. Three were recovered with Catfish Bend West Burials 35 and 55. Seven were associated with undetermined subphase Burials 13B and 13C and Burial 76. Another projectile point was recovered with Vienna subphase Burial 62A. Four additional projectile points were recovered during the osteological analysis from Catfish Bend West Burials 55, 36, and 61A.

Six of the eight projectile point occurrences at Site 1Pi61--all except Burials 8 and 76--had projectile points within the body cavities indicating that the projectile points were not mortuary associations indicative of status, but weapons probably instrumental in the death of these individuals.

At Site 1Pi33, six projectile points were associated with Summerville I phase Burials 18 and 20. Five Madison projectile points associated with

Burial 18 appear to represent a cache of true technomic mortuary artifacts (Ensor 1981:241, Fig. 55). One projectile point was recovered from the chest of Burial 20B and may be the material evidence of an early Mississippian assassination.

Shell Beads

All of the artifacts recovered in Catfish Bend subphase mortuary context and most of those recovered in Gainesville subphase mortuary contexts were shell beads or pendants.

Shell beads or pendants manufactured from freshwater or marine gastropods were associated with 20 burials in the Catfish Bend and Gainesville cemeteries. The largest quantities (more than 100) were associated with Burial 59, a young adult woman, and Burials 1 and 58, children, in the Catfish Bend Central cemetery; Burial 8, a young adult female in the Catfish Bend West cemetery; and Burial 19, a subadult, in the Gainesville North cemetery. Although the largest quantities of beads were associated with these specific young adult women and children, the presence or absence of beads does not segregate along age or sex dimensions.

On recovery, the beads were disassociated. Curren (1981), however, suggests that they were assembled into specific artifacts--necklaces, bracelets, or used as clothing ornaments. A beaded headband is suggested for Burial 1, a child in the Catfish Bend Central cemetery. A beaded sash is suggested from the placement of beads recovered from Burial 55, an adult female in the Catfish Bend West cemetery. The large quantities of beads associated with certain individuals may therefore represent beaded garments worn by the deceased individual at the time of interment. Smaller quantities may represent necklaces or bracelets. No larger quantities of beads were associated with adult males. It is possible that heavily beaded garments were worn primarily by women and children and the beads were, perhaps, manufactured by women.

Three species of gastropod shells were used for the manufacture of the Catfish Bend and Gainesville subphase beads: Anculosa cf. brevispira, Goniobasis cf. pupaeformis, and Marginella apicina. The Anculosa and Goniobasis spp. are local freshwater snails. Marginella apicina is a marine gastropod common in the northern Gulf of Mexico (Curren 1981:178). Disk and cylindrical shaped beads were made from unidentified species of marine gastropod collumellae, probably from a large conch or whelk (Curren 1981:178). Most of the shell beads recovered from Site 1Pi33 were of this type. All of these beads were small, ranging from 2 to 20 mm in length and from 5 to 20 mm in diameter (Curren 1981:177-178).

Pendants were also manufactured from unidentified species of marine shell (Curren 1981). The nonlocally available Marginella apicina and other marine shell beads and pendants could represent a different symbolic value than those manufactured from locally available shell, since trade may have been involved in their procurement. The Marginella beads, however, show no particular patterned distribution. Marginella beads were included in 13 of the 20 occurrences of shell beads recovered with the Catfish Bend and Gainesville subphase interments.

A total of 3405 Goniobasis, 103 Anculosa, 673 Marginella, and 709 beads probably manufactured from the columellae of a large marine conch or whelk was recovered from the Gainesville Lake excavations at Sites 1Gr2, 1Gr1X1, 1Pi61, and 1Pi33 (Curren 1981:177 ff.). The distribution of these beads shows that they were almost exclusively restricted to mortuary contexts.

A total of 3307 Goniobasis shell beads (97.12 percent of the Gainesville Lake area total) was recovered from Site 1Pi61. These were distributed among 14 separate occurrences including seven Catfish Bend subphase Burials 1, 8, 23, 28, 58, 59 and 73; five Gainesville subphase Burials 4, 27, 66A, 66B, and 78B; and two other contexts. At Site 1Pi33, 56 Goniobasis beads, or 1.64 percent of the Gainesville Lake area total, were distributed among five separate occurrences but only one Goniobasis shell bead was recovered from the pit fill of a Summerville I phase interment, Burial 29.

All of the 103 freshwater Anculosa beads recovered from the Gainesville Lake area excavations were associated with Catfish Bend subphase Burial 28.

A total of 618 marine gastropod Marginella beads, 91.83 percent of the Gainesville Lake area total, was recovered from Site 1Pi61. These were distributed among eight occurrences; Catfish Bend subphase Burials 23 and 80 and Gainesville subphase Burials 4, 16A, 19, 27, 56, and 66B. A total of 19 Marginella beads were recovered from Site 1Pi33; all of these were recovered with Summerville II-III phase Burial 2.

A total of 223 disk and rectangular shaped marine gastropod columella beads), 31.45 percent of those recovered from the Gainesville Lake area, was recovered from Site 1Pi61. These were distributed among 11 occurrences; six Catfish Bend subphase Burials 1, 23, 28, 55, 60, 58; four Gainesville subphase Burials 4, 27, 49, and 56, and one other context.

A total of 473 marine gastropod whelk or conch columella beads, or 66.71 percent of the Gainesville Lake area total of 709 beads was recovered from seven separate occurrences at Site 1Pi33. Four of these occurrences (270 beads) were recovered with Summerville I Burials 20, 25, 30, and 31.

Nine marine gastropod shell pendants were recovered from the Gainesville Lake area excavations. Eight of these were from Site 1Pi61, and one was from Site 1Pi33. At Site 1Pi61, one triangular pendant was associated with Vienna subphase Burial 69. Two teardrop shaped pendants were associated with Catfish Bend subphase Burial 23, and a third with Burial 55. One triangular pendant was associated with Catfish Bend subphase Burial 28. Three other triangular pendants were recovered with Gainesville subphase Burials 4, 27, and 66A. One disk shaped pendant was recovered with Summerville I Burial 28B at Site 1Pi33.

One of two freshwater pearls recovered from the Gainesville Lake excavations was associated with multiple Burial 20 at Site 1Pi33. The only Busycon whelk dipper recovered from the entire excavations was associated with Burial 31, an infant buried in the Summerville I cemetery at Site 1Pi33.

The distribution of the shell beads recovered from the Gainesville Lake area indicates that the local Goniobasis and Gulf Coast Marginella beads were almost exclusively restricted to Catfish Bend and Gainesville subphase mortuary contexts. The shell artifacts associated with Summerville I burials at Site 1Pi33 were manufactured from marine whelk or conch.

Other Artifacts

Few mortuary artifacts were recorded for the Catfish Bend and Gainesville subphase interments other than shell beads and projectile points. Burial 19, a subadult in the Gainesville North cemetery included one greenstone celt in addition to 395 shell beads, probably representing a necklace and bracelets (Curren 1981:Table 11). Burial 27, an adult male in the Gainesville South cemetery was accompanied by one greenstone celt and two Black Bear canines, in addition to 493 shell beads and a shell pendant. Burial 48, an adult male in the Gainesville south cemetery was accompanied by two turtle carapaces.

Eight Black Bear canines were recovered from the entire Gainesville Lake excavations (Curren 1981:179). The two turtle carapaces recovered with Burial 48 were the only ones recovered from the Gainesville Lake area excavations (Curren 1981:194-195, Tables 1 and 2). Three greenstone celts were recovered from the Gainesville Lake excavations. In addition to the two celts associated with Gainesville subphase Burials 19 and 27, a small celt was associated with Summerville II phase Burial 15 at Site 1Pi33 (Ensor 1981:135, Fig. 47).

The artifact inventory recovered from Summerville I burials at Site 1Pi33 included bone, stone, and shell artifacts, ceramic vessels, copper artifacts bearing Southern Cult motifs, and galena. The assemblage contrasts sharply with the Warrior Plain var. Warrior vessels and a single bone pin recovered with other Summerville I burials at Lubbub Creek (Powell 1981).

Status Implications

Most studies of the social implications of mortuary artifacts refer to Binford's (1962) distinction between technomic, sociotechnic, and ideotechnic functions that can be inferred from artifacts recovered in mortuary contexts, or from their patterned distribution. Thus formally technomic artifacts symbolize the personal achievement of the deceased individual--his success in coping with the natural environment. The sociotechnic function of artifacts refers to the extent that they served to integrate an individual into a larger group. The ideotechnic function of mortuary artifacts refers to their ideological function, they "signify and symbolize the ideological rationalization for the social system (Binford 1962:95)." The ideotechnic function of artifacts points to social partitioning. There is some evidence to suggest that these functions are hierarchical and the degree to which they are symbolized in mortuary contexts reflects the hierarchical ordering of the society. Thus in an egalitarian society most of the mortuary artifacts will be technomic and

will reflect the personal achievement of the deceased individual. The statuses are likely to represent a sexual division of labor. In a highly segregrated or stratified society, all three functional domains may be apparent and those artifacts associated with the highest status individuals will be significantly different from those recovered with the remainder of the population.

In practice, the social domains of statuses have been inferred from the regional distribution of certain artifacts or raw materials that recur in mortuary contexts. Mortuary artifacts or materials that are restricted in their distribution are likely to represent statuses of only local significance, but those artifacts that recur panregionally are assumed to reflect status recognized throughout the range of their artifact distribution. For this reason, information on the geographic distribution of artifacts or their raw materials is prerequisite to the assessment of social statuses.

One index to the sociotechnic status implications of mortuary artifacts is the extent to which artifact forms functioned as nonlocal symbols that crosscut cultural boundaries (Peebles 1971:69). Brown (1971:2) observed that exotic raw materials as well as panregional symbols serve to mark the statuses of significant individuals. This regional approach to status interpretation has been applied to the mortuary analysis of Middle Woodland societies (Streuver and Houart 1976, Jefferies 1976, Cole 1981a) to encompass the panregional distribution of raw materials that were traded throughout the Southeast. Whether the forms, symbols, or raw materials are considered, the panregional distribution and reiteration of similar forms of certain mortuary artifacts such as copper, galena, marine shell, and greenstone indicate access to trade and information networks that crosscut local boundaries. The presence of these artifacts or materials in mortuary contexts suggests that significant statuses can be inferred.

Nonlocal mortuary artifact associations recorded for the Catfish Bend subphase interments at Site 1Pi61 were restricted to Marginella apicina and other unidentified marine gastropod beads and pendants probably obtained from the northern Gulf of Mexico. Marine gastropod artifacts were recovered with Catfish Bend subphase Burials 1, 23, 28, 58, 60, and 80; three adult females, one adult male, and two children.

Catfish Bend subphase Burials 28 and 59 were unusual in that both were young women interred in a seated positon with hundreds of Goniobasis cf. pupaeformis shell beads. All of the locally obtainable Anculosa cf. brevispira beads recovered from the Gainesville Lake excavations were associated with the seated Catfish Bend subphase Burial 28, in addition to 1295 Goniobasis beads, one marine gastropod shell bead, and one marine gastropod shell pendant. No marine shell was recovered from the seated Catfish Bend subphase Burial 59 but 1142 tiny Goniobasis beads were recovered with the burial.

The similarity between Burials 28 and 59 in their seated position and quantities of beads, probably representing beaded garments, suggests that they shared a similar status. Burial 28 had been placed in an intentionally prepared large basin burial pit, apparently placed against a frame-

work supported by three posts. The body of seated Burial 59 had been placed in a refuse pit. If Burials 28 and 29 shared a common status, the presence of marine shell with Burial 28 but only locally available shell with Burial 59 suggests that marine shell was not attributed any greater significance than local shell. The presence of two seated female burials with large numbers of beads is unusual, as is the high incidence of females with artifacts within the Catfish Bend cemeteries--six of the ten individuals with artifacts were young adult or adult women. The artifact distribution could reflect the special status of women in this society. The high incidence of females with artifacts could, however, reflect the disproportionately large number of women represented in the Catfish Bend mortuary population.

Curren (1981:180-181) observed that the tiny shell beads recovered at Site 1Pi61 represented considerable expenditure of effort by the manufacturer and suggested that they may have economic as well as ornamental value. They may have functioned as currency or symbols of fertility (1981:181). They may, however, simply represent the handiwork, probably of women, and have no particular status implications over the accomplishment of their manufacture.

The presence of marine gastropod shell in the Catfish Bend and Gainesville cemeteries reflects trade or direct contact with the Gulf Coast and could document the existence of an alliance, trade, and perhaps marriage exchange relationship between the two regions. The existence of this network was not documented by the nonmortuary artifact inventories of either of these groups. Weeden Island sherds were, however, recovered from nonspecific contexts in Miller III components and Jenkins (1982, personal communication 1982) has identified Miller III ceramic assemblages within the Mobile Delta and along the Mobile Gulf Coast usually in association with Weeden Island assemblages.

Of the 33 Gainesville subphase interments, 12 had associated artifacts. Most of these were Goniobasis beads. Artifacts were recovered with four adult males, two adult females, two subadults, two children, and two infants. Most of the Gainesville subphase marine gastropod beads or pendants were associated with children in Burials 4, 16A, 19, 49, 66A, and 66B. Burial 27, an adult male, and Burial 56, a young adult male, also had associated marine gastropod artifacts. The presence of these marine gastropods indicates continued trade or direct access to northern Gulf of Mexico marine resources.

Greenstone celts were recovered with Gainesville subphase Burial 27 and Burial 19, a subadult of undetermined sex. Jones (1939) suggested that the greenstone in the Tennessee Valley was obtained from the Hillabee schist formation in east-central Alabama but a source identification of greenstone celts recovered in mortuary association has never been subject to rigorous study. In the Tennessee Valley the distribution of a distinctive greenstone celt form in mortuary contexts throughout the Middle Woodland Copena complex indicates clear sociotechnic status implications for greenstone celts in that area (Cole 1981a). Greenstone celts were included in special status interments during the Miller I and II phases at both the Bynum and Pharr sites (Cotter and Corbett 1951, Bohannan 1972). The distribution of greenstone celts in Late Miller III mortuary contexts

is unknown, but it is unlikely that these artifacts are restricted to local significance during this time period. Although these celts are formally technomic items, their manufacture from exotic greenstone, as well as their finely finished form (Ensor 1981:135, Fig. 47) indicates that Burials 19 and 27 were the interments of significant individuals.

Whelk or conch marine gastropod beads at Site 1Pi33 were associated with Summerville I Burial 20, a multiple burial of four individuals which included copper artifacts embossed with Southern Cult motifs; Burial 25, a child; Burial 30, an adult female; and Burial 31, an infant. A marine gastropod pendant was associated with Burial 28B, a young adult male whose pit intruded the pit of Burial 20. A whelk dipper was associated with the infant Burial 31.

All of the Summerville I marine gastropod beads were identified as whelk, Buccinadae, or conch (Busycon sp.) columellae. Busycon sp. artifacts are associated with Mississippian elite burials throughout the Southeast. The pearl and retainer burials recovered with Burial 20, copper artifacts, and galena are strong evidence that the Summerville cemetery area at Site 1Pi33 was reserved for relatively elite individuals.

The artifact inventory at the Site 1Pi33 cemetery including copper, galena, marine shell beads, Southern Cult symbolism, and the use of "non-persons" as mortuary artifacts are all diagnostic of the Moundville phase status grading system and specifically mark the graves of high status individuals within that hierarchical system (Peebles and Kus 1977:441). All of these artifacts, except the copper repousse falcon plate and symbol badges (Larson 1959) were represented among the 214 Moundville burials analyzed by McKenzie (1966) from Civilian Conservation Corps (CCC) and Moore's (1905, 1907) excavations at Moundville. The spatial segregation of the Summerville I cemetery is also one of the diagnostic characteristics of the Moundville status grading system (Peebles and Kus 1977:441). The absence of these diagnostic artifacts in other Summerville I interments throughout the Lubbub Creek Archaeological Locality (Powell 1981) indicates that two distinct social classes were represented in the Summerville I mortuary population at Lubbub Creek.

The Southern Cult motifs embossed on copper artifacts associated with Burial 20, from the similar context of similar objects throughout the Southeast, may mark the chiefly status of Burial 20B. Although proximity to the major center at Moundville suggests that the Summerville I community at Lubbub Creek may have been part of the Moundville political hierarchy, the motifs represented on these copper artifacts show closer stylistic affinities to similar artifacts recovered at Etowah (Jenkins, this volume, Chapter V, Fig. 22).

The entire Summerville I mortuary artifact inventory suggests an ideotechnic order in which formally technomic artifacts--Moundville Plain var. Warrior vessels and bone artifacts--were common and were represented in both village and elite interments. Copper, galena, whelk or conch shell, and mortuary vessels with incised designs were apparently restricted to elite individuals.

Burial Position

The distribution of burial position types among the Catfish Bend subphase, Gainesville subphase, and Summerville I phase burials is shown in Table 11. The greatest variability is represented in the Catfish Bend subphase population, but the majority (29 of 45 or 64.4 percent) were flexed on side. Four individuals were buried in unusual positions. Two were seated, one flexed ventral, and one extended ventral interments were included in the Catfish Bend subphase sample. The greatest majority (22 of 33 or 66.7 percent) of Gainesville subphase burials were flexed on back with legs to one side. Five individuals were flexed on side as were the majority of the Catfish Bend subphase interments. The majority (13 of 19 or 68.4 percent) of the Summerville I phase burials were in an extended position. Four flexed burials were included in the Summerville I sample (Burials 3, 29, 31, and 35). Burials 3 (flexed, disturbed) and 35 (flexed on side) were near the extreme northern boundary of Recovery Strip 3 outside of the main burial cluster (Fig. 2). Burials 29 and 31 were semiflexed on back and were within the main burial cluster.

Burial Facilities

Earlier Miller III interments were characterized by the almost exclusive use of recycled storage or cooking pits as burial facilities (Jenkins, this volume, Chapter V). Jenkins' (Jenkins and Ensor 1981) pit typology was used to describe the burial pits of the Catfish Bend, Gainesville, and Summerville I interments to determine if characteristic burial pit shapes could be correlated with the subphase or phase assignments. The dense middens at Site 1Pi33 and particularly the shell midden at Site 1Pi61 precluded a clear distinction between the use of recycled pits and intentionally dug burial pits because nearly all of the pits were filled with mussel shell and midden. The storage or cooking pits were, however, generally straight cylindrical, bell shaped, or irregular and usually excluded the small and large basins. No instances of rectangular basin storage or cooking pits were noted. The large and small basins and the rectangular basin pits that contained burials were, therefore, probably intentionally prepared burial facilities. As shown in Table 12, 29 of the 42 or 69.05 percent of the Catfish Bend subphase burial pits were large or small basins. Only two (4.76 percent) were rectangular basins. The remaining 11 or 26.19 percent may have been recycled storage pits and two burials were under the floor of Structure 5.

Only two Gainesville subphase burials were buried in possible recycled pits and two were recovered in the midden with no discernible associated pit. The remainder were interred in probable burial pits and there is a slight prevalence of rectangular pits over large and small basins. Most (80 percent) of the Summerville I phase interments were in rectangular burial pits, two were in large basins, and one was undetermined.

Based on the criterion of pit shape, a trend toward the increased use of prepared burial facilities and rectangular burial pits is indicated for the three temporally distinct populations.

Table 11. Burial Position.

Burial Postion	Catfish Bend Subphase					Gainesville Subphase				Summerville I Phase	
	Central	West	South	Total	%	North	South	Total	%	Total	%
Flexed on side	12	10	7	29	64.44	4	1	5	15.63	1	5.26
Flexed on back	3	2	3	8	17.78	13	9	22	16.66	2	10.53
Flexed ventral	-	1	-	1	2.22	-	-	-	-	-	-
Reburial (?)	-	-	-	-	-	1	-	1	3.13	-	-
Extended supine	-	-	1	1	2.22	-	2	2	3.13	13	68.42
Extended ventral	1	-	-	1	2.22	-	-	-	-	-	-
Seated	1	1	-	2	4.44	-	-	-	-	-	-
Undetermined	1	2	-	3	6.67	1	2	3	9.38	3	15.78
TOTAL	18	16	11	45	99.99	19	14	33	100.02	19	99.99

Table 12. Burial Pit Types.

Pit Types	Catfish Bend Subphase					Gainesville Subphase				Summerville I Phase	
	Central	West	South	Total	%	North	South	Total	%	Total	%
Small Basin	6	4	2	12	28.57	4	–	4	15.38	–	–
Large Basin	8	5	4	17	40.48	3	3	6	23.08	2	13.33
Rectangular Basin	–	–	2	2	4.76	6	7	13	48.14	12	80.00
Straight Cylindrical	1	2	–	3	7.14	–	–	–	–	–	–
Amorphous/Compound	1	–	–	1	2.38	1	–	1	3.85	–	–
Structure Floor	–	–	2	2	4.76	–	–	–	–	–	–
In Midden (no pit)	–	–	–	–	–	1	1	2	7.69	–	–
Undetermined	2	2	1	5	11.90	1	–	1	3.85	1	6.67
TOTAL	18	13	11	42	99.99	16	11	27	100.00	15	100.00

Orientations

The Catfish Bend subphase interments exhibited great variability in orientation (Table 13). A slight majority (10 out of 45 or 22 percent) were oriented toward the northeast. Gainesville subphase orientations were also variable. The majority were oriented toward the southeast, northeast or east. The Summerville I interments were nearly all oriented to the east. One was oriented southeast and one was undetermined. Two individuals not included in the main cluster were oriented south (Burials 3 and 35).

Pathologies and Anomalies

Evidence of trauma was among the most numerous osteological anomalies or pathologies noted for the Catfish Bend suphase interments. Trauma was less prevalent among the Gainesville subphase interments and only three Summerville I phase individuals evidenced osteological symptoms of trauma. Evidence of trauma was restricted to adults or young adults in all cases. Hill (see below) has classified the instances of trauma into nonaccidental and accidental categories. Except for the Catfish Bend West group, only one instance of nonaccidental trauma was noted for each of the cemeteries: Burial 24, an adult male in the Catfish Bend Central cemetery; Burial 11, an adult female in the Catfish Bend South cemetery; Burial 34, an adult male in the Gainesville North cemetery; Burial 43 in the Gainesville South cemetery; and Burial 20B in the Summerville I cemetery. In the Catfish Bend West cemetery nonaccidental trauma was noted for Burial 35, an adult male; Burial 36, a young adult female; Burial 55 an adult female; and Burial 61, an adult male. Projectile points were recovered during the osteological analysis of all of these burials.

Of those individuals whose death may have resulted from nonaccidental trauma, only Burial 55 in the Catfish Bend West Cemetery and Burial 20B at Site 1Pi33 had associated artifacts in addition to projectile points. The artifacts and probable retainers associated with Burial 20B at Site 1Pi33, may mark the chiefly status of this individual.

Multiple interments were encountered at each of the cemeteries, except the Catfish Bend Central and Catfish Bend South cemeteries. The two multiple interments at Catfish Bend West were Burial 61, an adult male and female and a child, and Burial 70 which contained the interments of two children.

Three multiple interments in the Gainesville North group included an adult female and infant in Burial 16, a child and subadult in Burial 66, and a child and adult female in Burial 78. Two multiple interments in the Gainesville South group included a child and an infant in Burial 4, and two adult males and an adult female contained within the same pit but designated Burials 42, 43, and 44.

Multiple interments at Site 1Pi33 were restricted to adults--the four adults in Burial 20, which may have been a multi-male interrment, and a young adult male and female in Burial 28.

Table 13. Burial Orientations.

Orientation	Catfish Bend Subphase					Gainesville Subphase				Summerville I Phase	
	Central	West	South	Total	%	North	South	Total	%	Total	%
North	1	2	4	7	15.56	-	-	-	-	-	-
Northeast	3	6	1	10	22.22	7	-	7	21.88	-	-
Northwest	3	1	2	6	13.33	-	1	1	3.13	-	-
South	3	-	-	3	6.67	1	1	2	6.25	2	10.53
Southeast	3	1	2	6	13.33	2	9	11	34.38	1	5.26
Southwest	-	1	2	3	6.67	-	1	1	3.13	-	-
East	-	1	-	1	2.22	6	1	7	18.75	15	78.95
West	2	1	-	3	6.67	-	-	-	-	-	-
Seated	1	1	-	2	4.44	-	-	-	-	-	-
Undetermined	2	2	-	4	8.89	3	1	4	12.50	1	5.26
TOTAL	18	16	11	45	100.00	19	14	33	100.02	19	100.00

OSTEOLOGICAL ANALYSIS

The skeletal sample originally examined by Hill (1981) consisted of 136 individuals, 96 from Site 1Pi61 and 40 from Site 1Pi33 (Tables 1 and 2). These individuals were later assigned to phase or subphase designations by diagnostic ceramic associations. The original data sheets for 45 Catfish Bend and 33 Gainesville burials from Site 1Pi61 and 19 Summerville I subphase burials from Site 1Pi33 were re-examined to determine if any trends or tendencies could be observed within the three discrete mortuary populations (Figs. 1 and 2, Tables 4-9).

Tables 4 through 9 are summaries of the artifact associations and biological mortuary data for each of the burial areas. The biological data is an abbreviation of that found in Hill (1981). Since the time of the initial submission of that manuscript in 1979, the biological data has been re-worked from the original data forms. Therefore, any discrepancy noted between the tables appearing in Hill (1981) and the tables presented in this paper can be attributed to this fact.

Materials and Methods

The osteological material was subjected to a series of basic analytical techniques typical for the initial curation of archaeological samples. These analytical techniques included the determinations of age at death, sex, pathologies, anomalies, and anthropometric techniques which include the determination of stature.

Age. As an organism grows, it goes through a series of concurrent processes of maturation and degeneration commonly referred to as aging. From accumulated knowledge about how these processes occur, most biologists now agree on markers common enough, and that occur at such regular frequencies, as to be recognized as standards for particular stages of development. Biologists familiar with these skeletal markers can assign a particular age to an individual by noting the presence or absence of certain features.

As a living tissue, the skeleton is subject to constant resorption and deposition in reponse to particular systemic and environmental stresses. Because the processes of maturation and degeneration of the skeleton are concurrent, it is necessary to examine as many of the skeletal elements as possible, and assign a score or age.

In general, the criteria used in this particular study to assess maturation were the appearance and union of primary centers of ossification, dental eruption sequences, diaphyseal length of long bones, and the stages of epiphyseal union. Of these, dental eruption sequences have been shown to be among the most accurate criteria for determining subadult age because the teeth are under stronger genetic control than are other skeletal elements and are, therefore, less subject to environmental perturbation. The dental maturation charts prepared by Schour and Massler (1941, 1944) and Ubelaker (1978) were most useful in this study. If teeth were not available, the long bone length standards published by Johnston (1962)

and Ubelaker (1978) were used. Diaphyseal length was also used to supplement age determination inferred from dental maturation. Occasionally it was possible to refer to the developmental sequences obeserved by Greulich and Pyle (1959) for the bones of the hand and wrist. Summaries of research on the appearance and union of ossification centers and epiphyseal union, provided by Bass (1971), Krogman (1973), and Stewart (1954) and the extensive research on epiphyseal union by McKern and Stewart (1957) were also referenced.

Degeneration criteria included cranial suture closure, changes in texture and density of bones, accentuation of muscle attachments, changes in the symphyseal face of the os pubis, dental attrition, and degenerative pathologies. Because of the variability of these criteria between different populations, a combination of degenerative characteristics was used to determine the age at death for adults. The reference texts used for these criteria were Bass (1971), Krogman (1973), and Ubelaker (1978).

Sex. The dynamic nature of skeletal tissue during life often limits the capacity of the investigator to make accurate assessments of the information represented by the recovered skeletal elements after death. Hormones affect the growth and remodeling of skeletal tissue, therefore, the most accurate criteria for assessment of an individual's sex are those based on developmental changes in the bone after puberty. The descriptive summaries of sexual dimorphism in Stewart (1954), Bass (1971), Krogman (1973), and Ubelaker (1978) were most frequently referenced. Usually no attempt was made to assess the sex of subadults (i.e., those under the age of 12 to 15 years).

Pathology and Anomaly

Pathologies are those biological and environmental insults, perturbations, or afflications which will, in most cases, lead to the degradation of an individual's overall health, resulting finally in death. Anomalies, although being out of the ordinary in terms of normal growth and development, are usually not detrimental to an individual's health, but they can limit the ultimate range of possible behavior within a particular environment.

Bone, unlike soft tissues that are capable of exhibiting changes in color and temperature in response to pathological conditions, is quite limited in its response capabilities. Consequently, many different pathological conditions will generate the same osteological response. Even if a researcher has all of the skeletal elements of an individual, a differential diagnosis, one that delimits specific pathological conditions that may have produced an osteological response, is often difficult, if not impossible, to ascertain.

A differential diagnosis was attempted for each individual, whenever possible, by visual and roentgenographic examination. For this paper, however, general categories were applied to the observed osteological response. These categories are: (1) degenerative pathologies, generally characterized by osteolysis or osteoporosis which include osteoarthritis,

vertebral osteophytosis, and osteoporosis; (2) nutritional stress, characterized by a combination lytic/blastic activity, and abnormal mineralization, or by any condition which might inhibit normal masticatory function, including porotic hyperostosis, cribra orbitalia, or severe dental abscess and attrition; (3) systemic infection, characterized by a generalized to severe periostitis, osteolysis and blastic or sclerotic activity, which includes periostitis, localized osteomyelitis, and hematogenous osteomyelitis; and (4) trauma, which includes any evidence of fracture, as well as embedded projectiles or projectiles found in direct association (such as those found among ribs). Accidental trauma was distinguished from nonaccidental trauma in this study.

Anthropometry

Standardized measurements were taken on complete or semicomplete skeletal elements whenever possible, according to those methods defined in Bass (1971), using sliding and spreading calipers, metric tape, and an osteometric board. Stature was computed by using the methods of Genoves (1967:76) and Trotter and Gleser (1958:120) which are reproduced in Ubelaker (1978).

For a more detailed discussion of the osteological analysis, see Hill (1981).

Discussion

Figures 3, 4, and 5 are graphs indicating the percent of individuals from each of the five Late Miller III burial areas at Site 1Pi61 and the Summerville I cemetery at Site 1Pi33 dying within each age category. The broken lines on the graphs imply discontinuous data.

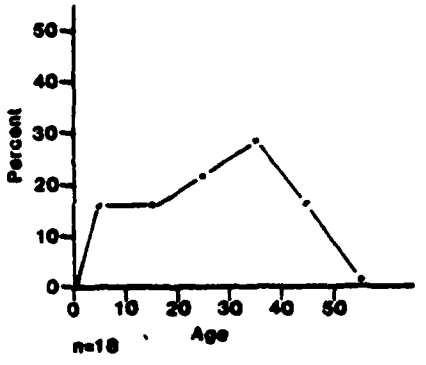
One might intuitively expect a high mortality rate for prehistoric groups for the years of infancy and childhood, followed by a lower rate during adolescence and young adulthood, and finally followed by a higher rate during older adulthood i.e., a bimodal frequency distribution. Postnatal complications and weanling stress would probably account for the higher infant mortality. If a population is successfully adapted to a particular environment, however, this bimodal frequency distribution might not result. In a population exhibiting systemic equilibrium, one would expect to see relatively equal survival probabilities for individuals in the younger age categories, followed by an increase in adult mortality as a consequence of old age, i.e., a unimodal distribution.

If the Catfish Bend, Gainesville, and Summerville I skeletal samples are representative of their respective populations, there appears to be a distinct difference in mortality rates among them (Fig. 5). The Catfish Bend and Summerville I populations appear to have been more adaptively successful in terms of reproductive fitness than the Gainesville population in that there were more individuals who survived to an age when reproduction would have been possible.

The combined Catfish Bend subphase and the Summerville I graphs both show a peak age-of-death at 35 years exhibiting a unimodal distribution

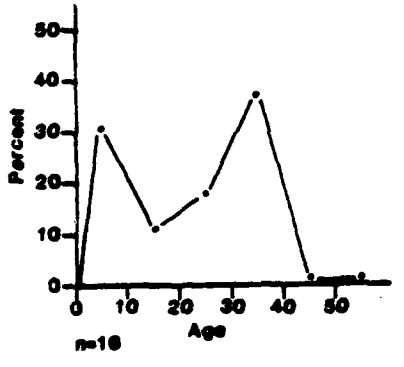
Catfish Bend Subphase Cemeteries:
Percent of Individuals Dying Within Each Age Category

Catfish Bend Central Cemetery



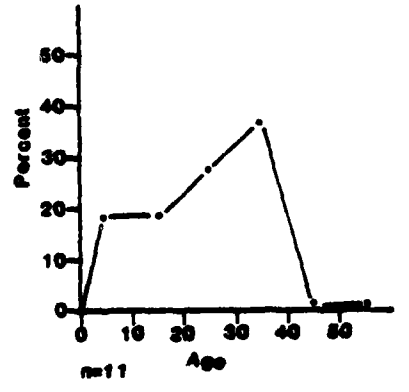
Age	n	Percent
0-9	3	16.67
10-19	3	16.67
20-29	4	22.22
30-39	5	27.77
40-49	3	16.67
50+	0	-

Catfish Bend West Cemetery



Age	n	Percent
0-9	5	31.25
10-19	2	12.50
20-29	3	18.75
30-39	6	37.50
40-49	0	-
50+	0	-

Catfish Bend South Cemetery

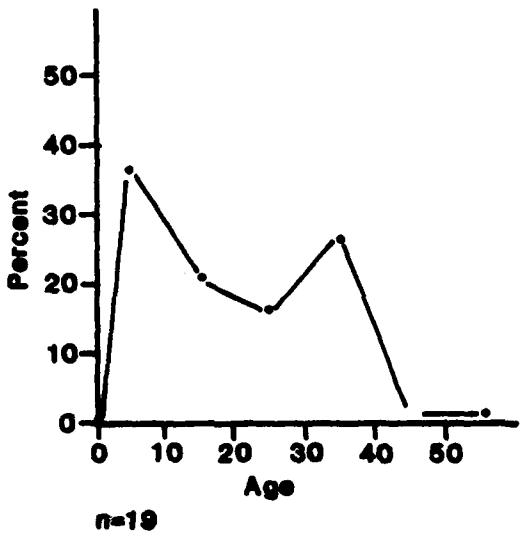


Age	n	Percent
0-9	2	18.18
10-19	2	18.18
20-29	3	27.27
30-39	4	36.36
40-49	0	-
50+	0	-

Figure 3.

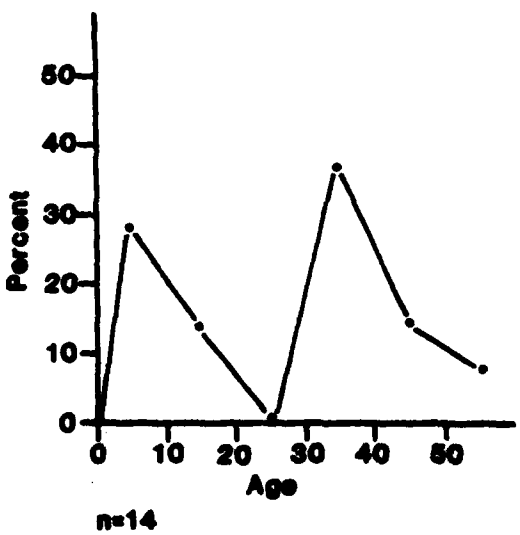
Gainesville Subphase Cemeteries: Percent of Individuals Dying Within Each Age Category

Gainesville North Cemetery



Age	n	Percent
0-9	7	36.84
10-19	4	21.05
20-29	3	15.79
30-39	5	26.32
40-49	0	-
50+	0	-

Gainesville South Cemetery

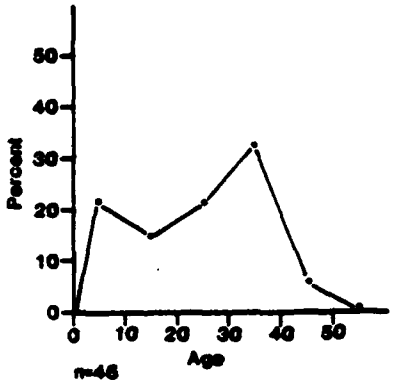


Age	n	Percent
0-9	4	28.57
10-19	2	14.29
20-29	0	-
30-39	5	35.71
40-49	2	14.29
50+	1	7.14

Figure 4.

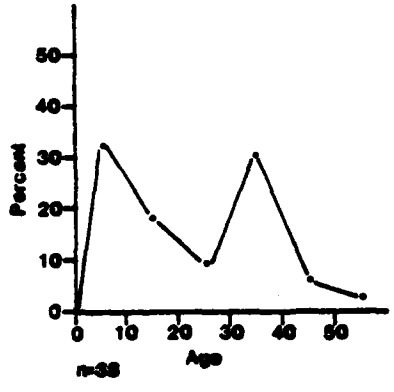
Catfish Bend, Gainesville, and Summerville I Cemeteries: Percent of Individuals Dying Within Each Age Category

Catfish Bend Cemeteries Combined



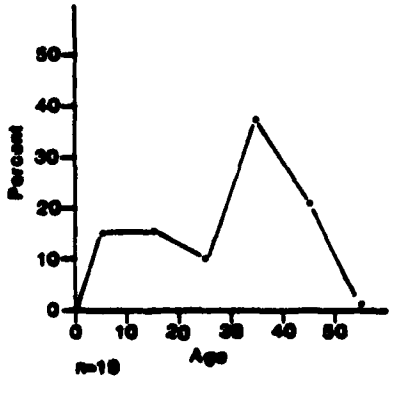
Age	n	Percent
0-9	10	22.22
10-19	7	15.56
20-29	10	22.22
30-39	15	33.33
40-49	3	6.67
50+	0	-

Gainesville Cemeteries Combined



Age	n	Percent
0-9	11	33.33
10-19	6	18.18
20-29	3	9.09
30-39	10	30.30
40-49	2	6.06
50+	1	3.03

Summerville I Cemetery



Age	n	Percent
0-9	3	15.79
10-19	3	15.79
20-29	2	10.53
30-39	7	36.84
40-49	4	21.05
50+	0	-

Figure 5.

expected for successfully adapted populations i.e., reproductive continuity. The combined Gainesville subphase mortality rates peak at 5 years and again at 35 years exhibiting a bimodal frequency distribution expected for a population undergoing environmental stress--a relatively large portion of the population never reaches reproductive age.

Table 14 is a summary of the pathology data for each of the burial areas, and the combined populations, giving the total number of individuals and the percent of population affected by each of the pathologies.

The mortality graphs indicate that the Gainesville subphase mortuary population was apparently subjected to environmental stress of sufficient intensity to affect the reproductive continuity of the population. Environmental stresses corresponding to social, nutritional, and disease stressors may be inferred from osteological pathologies. Pathologies indicative of trauma, nutritional stress, and infection are used here as being representative of social, nutritional, and disease stressors respectively.

The dramatic differences between the Miller III and Summerville I percentages for trauma and the Catfish Bend-Gainesville-Summerville I percentages for infection are of particular interest. The data from the skeletal series seem to clearly indicate a distinction between the Catfish Bend and Gainesville subphases which were grouped together in Caddell's (1981a) and Woodrick's (1981a) floral and faunal analyses because the ceramic distinctions between these subphases had not been formalized when those analyses were conducted (see also Jenkins and Peebles, Appendix 1, this volume). The mortuary artifacts for the two subphases (Tables 4-9) were also similar.

Trauma generally represents extrinsic influences on the skeleton which result from many factors, and the incidence and location of traumatic events is greatly influenced by culture and environment (Ortner and Putschar 1981:55). These cultural and environmental factors produce fractures with such regularity, in terms of appearance and location on the skeleton, that biological anthropologists can recognize a particular type of fracture as being caused by or resultant from a particular type of behavior.

For this study, trauma was subdivided into two categories: accidental and nonaccidental. Accidental fractures were any that could have resulted during the course of everyday activities, such as broken toes or ribs, or Colle's fractures which result from the individual's attempting to catch himself or herself when in the act of falling, i.e., to brace with the forearms extended and the hands extended (Hill 1981:Fig. 4). Nonaccidental traumas were those fractures which resulted from intentional violence. These almost always are incurred during single combat or warfare, and can be easily recognized on the skeleton, especially by those with forensic experience. A parry fracture is one of the most common types of nonaccidental fractures, and usually occurs as a consequence of an individual's using the forearm as a defense against an oncoming blow. The fracture occurs in the midforearm region, and can involve one or both bones of the forearm (Hill 1981:Fig. 5). Projectile points imbedded in bones, or associated with a burial in a position other than one expected

Table 14. Pathology Summary (Percent of Population Affected).

Pathology	Catfish Bend Central n=18		Catfish Bend West n=16		Catfish Bend South n=11		Gainesville North n=19		Gainesville South n=14		Catfish Bend Combined n=45		Gainesville Combined n=33		Summerville I n=19	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Trauma	5	27.78	6	37.50	4	36.36	7	36.84	5	35.71	15	33.33	12	36.36	3	15.79
Nutritional Stress	7	38.89	5	31.25	5	45.45	11	57.89	5	35.71	17	37.78	16	48.48	8	42.11
Infection	7	38.89	5	31.25	4	36.36	11	57.89	11	78.57	16	35.56	22	66.66	5	26.32
Degenerative Pathologies	3	16.67	5	31.25	4	36.36	5	26.32	5	35.71	12	26.67	10	30.30	4	21.05

for a cermonial offering (in the rib cage, for instance), as well as mass graves with individuals haphazardly placed, would also indicate nonaccidental trauma. Although the Catfish Bend (nine individuals with accidental trauma and six with nonaccidental trauma) and Gainesville (ten individuals with accidental trauma and two with nonaccidental trauma) populations are almost equal in terms of the percent of population evidencing trauma, there is a dramatic decrease in trauma during the Summerville I subphase (two with accidental trauma and one with nonaccidental trauma).

At Site 1Pi61, nine individuals either had projectile points embedded in the bones themselves, or had projectile points in direct association. Of these nine, five were from Catfish Bend West (Burials 35, 36, 55, 61A, 61B) and four could not be assigned a subphase designation (Burials 13B, 13C, 62A, 62B). Burial 36, in addition to the associated projectile point, evidenced cut marks on the proximal right radius (elbow).

There was an exceptionally high incidence of unusual interments at Site 1Pi61. There were five mass interments: two from Catfish Bend West (Burials 61 and 70); one from Gainesville South (Burials 42, 43, 44); and two of undetermined cultural affiliation (Burials 13 and 62). There were three seated burials (Burials 7, 28, 59): Burials 28 and 59 were elaborate Catfish Bend interments and Burial 7 could not be assigned a subphase designation. Three individuals were interred face-down (Burials 18, 55, 68). Burial 55, adult female (35±5 years), was interred with the hands and feet bound behind the back; several projectile points were associated with the skeleton which had been decapitated. Burial 18, an adult male of 30+ years, appeared to be anatomically complete. Degenerative pathologies and possible trauma (a healed fracture) were noted. Burial 68, an adult male of 25+ years, was disturbed by grading activities which may have removed the cranium. The lower legs and arms had apparently been removed prior to interment. Only the femora, patella, pelvis, vertebrae and ribs, in anatomical order remained. No pathologies were noted. Burial 55 is from Catfish Bend West, Burial 68 is from Catfish Bend Central, and Burial 18 is of undetermined cultural affiliation. It is spatially associated with the Catfish Bend South cemetery. In Catfish Bend South, two young adult females, Burial 46 and 47, had been interred under the floor of Structure 5.

The Catfish Bend subphase was apparently a period of severe social stress, and the area designated as Catfish Bend West seems to have had some particular significance. The high incidence of Catfish Bend subphase nonaccidental trauma reflects this social stress.

In the formal Summerville I cemetery at Site 1Pi33, with the exception of multiple Burials 20 and 28, there seem to have been no unusual interments. Although the stature of several individuals in the cemetery was taller than most individuals in the Miller III population, this difference in height may not have been significant in either a statistical or cultural sense. There were several individuals who were decidedly more robust in thorax and shoulder development, i.e., classic mesomorphs (Burials 19, 20A, 20B, 20C, 23, 27, 29). Burials 16, 17, 18, and 23 evidenced a combination of male and female characteristics. Burial 20B was the only one evidencing nonaccidental trauma (a projectile point in the chest). This individual was the tallest member of the Summerville I group and also

appears to have been the principal interred in the highly elaborate deposition composed of four individuals (Burials 20A, 20B, 20C, 20D) in varying states of complete skeletal elements. Exceptional stature and decreased sexual dimorphism could result from selective dietary or breeding practices, or both.

Nutritional stress has been targeted recently by numerous biologists as being of critical importance to particular cultures. Certainly nutritional stress is, without question, a principle component in any cultural system, but as with other key elements, it cannot be segregated from other elements which compose that particular system.

Nutritional stress was used in this study to denote any of the cranial lesions collectively known as porotic hyperostosis, as well as any severe dental pathology which would have impaired normal masticatory function, such as severe attrition or abscess.

Porotic hyperostosis is a term strictly used to describe the appearance of certain crainial lesions, rather than the pathology itself. The terms cribra orbitalia, cribra frontalis, cribra parietalis, and cribra occipitalis are used to indicate the specific locations of the lesions on the cranium. These lesions appear as a spongy or sieve-like porosity and can range in size from tiny pinpoint holes confined to small areas, such as the upper portion of the orbits, to massive lesions encompassing the entire cranial vault. The lesions are characterized by the thinning and often complete destruction of the outer table of the cranial vault, caused by pressure atrophy produced by hypertrophy of the hematopoietic diploe between the inner and outer tables of the cranium (Steinbock 1976:214). The sieve-like or coral appearance of the affected area results from the complete destruction of the outer table and exposure of the hypertrophied cancellous bone or diploe. The skull vault in the affected area is thicker than normal because of the hypertrophied bone that protrudes to a slight or moderate degree over the normal external contour of the skull (Steinbock 1976:214-215). In cross-section or radiograph, the thickened diploe has a characteristic hair-on-end appearance.

The lesions themselves have been attributed to numerous causes, such as rickets (Williams 1929), calcium deficiency (Todd, cited in Williams 1929), congenital hemolytic anemia such as thalassemia or sickle-cell anemia (Angel 1966, 1967), and iron deficiency anemia (El-Najjar 1976, El-Najjar and Robertson 1976, El-Najjar et al. 1976, Steinbock 1976, Lallo et al. 1977, Mansforth et al. 1978). Although all of these are probable causes, severe anemia appears to be critical in this pathological response. Because of the interrelatedness of these causes, the general category of dietary or nutritional stress was used in this study. Severe dental pathologies were also included in the category because they would have impaired normal masticatory function to such an extent that an individual's diet would have been limited to easily ingested foods.

Iron deficiency anemia is caused by inadequate dietary iron content, inability to absorb iron from the intestine, excessive losses of iron from the body (such as through bleeding), disturbances of iron metabolism by infection or other mechanisms, or dietary deficiencies such as a chronic lack of amino acids and minerals necessary for bone formation (Steinbock 1976:231).

Studies of the relationship of diet to iron deficiency anemia indicates that artificial or prolonged milk feeding (Fullerton 1937, McKay 1931), prolonged milk feeding and diets of maize or corn gruels (Ashworth 1973, Granthan-McGregor et al. 1974, Jeliffe and Blackman 1962, Lallo et al. 1977, Mensforth et al. 1978) and maize-dependent diet (El-Najjar 1976, El-Najjar and Robertson 1976, El-Najjar et al. 1976) all contribute to iron deficiency anemia.

The pathology data indicates a 10.70 percent increase in nutritional stress from Catfish Bend to Gainesville subphases and a 6.37 decrease from Gainesville to Summerville I (Table 14). These percentages may reflect the same complex of stressors on the Gainesville population that resulted in the exceptionally high incidence of infection and bimodal distribution of the Gainesville mortality rate (Fig. 5).

It is virtually impossible to segregate the components of a system. Mensforth et al. (1978) have demonstrated the apparent relatedness of nutritional stress and systemic infection. Microorganism infection was a major consequence of the subsistence pattern of most prehistoric populations, particularly those with more sedentary settlements. Disposal of garbage and other waste materials often lead to vast midden accumulations and pollution of certain areas. Cultural practices such as common use of cooking and storage vessels, particularly unglazed pottery, would have contributed to high microorganism infection rates as well (Brothwell 1967:63). Children, notorious for kicking around in garbage dumps, are also more susceptible to infection because of their lack of accumulated immunity to certain pathogens. The high infant mortality during the Gainesville subphase appears to be related to the high infection rates.

The Gainesville subphase structures at Site 1Pi61 were encompassed within a 61 m (200 ft) diameter midden containing quantities of shell and other organic debris (Jenkins and Ensor 1981). The midden was deepest in the central part of the site and refuse pits were situated near the structures suggesting that there was no segregation between habitation, disposal, and cemetery areas (Fig. 1, and Jenkins, this volume, Fig. 6). The conditions at the site could have contributed to the high infection rates of the Gainesville population. The same conditions, however, with less midden accumulation, were present during the Catfish Bend occupation at Site 1Pi61. A dense midden accumulation was also present at Site 1Pi33 but there is a clear segregation between habitation areas and the cemetery. It is unlikely that Site 1Pi33 was used as a habitation area during the Summerville I phase.

It would be very difficult to ascertain in all instances if the death of an individual had resulted from an infection or from nutritional stress, or more likely, from both. The question can be likened to the parable of the chicken or the egg; was the individual so ill from microorganisim infection that he was incapable of eating an adequate meal, or did dietary deficiency result in an impaired immune response? The mutual dependence of infection and nutritional stess is invariably represented osteologically. Individuals with skeletal evidence of one also have evidence of the other, almost without exception. The same type of interdependency was noted for infection and severe dental pathology in the Miller III population.

The Summerville I data seemingly shows less correlation between nutritional stress and infection. Of the eight individuals exhibiting nutritional stress (Burials 3, 14, 17, 18, 27, 29 31, and 34), four (Burials 3, 14, 27, and 31) also exhibited osteological evidence of infection. The remaining instances of nutritional stress were severe dental pathologies with no clinical evidence of associated infection. Only one individual evidencing infection, osteomyelitis diagnosed for Burial 20C, showed no corresponding evidence of nutritional stress.

Because of the high incidence of dental pathologies in the Summerville I population (six of the eight examples classified as nutritional stress) nutritional stress levels between the Gainesville subphase and Summerville I phase appear to be similar. Only two instances of nondental nutritional stress were noted in the Summerville I population, however, for the child in Burial 14 and for the infant in Burial 31. The incidence of porotic hyperostosis was much higher for the Gainesville subphase population. Specific instances of nutritional stress recorded for the combined Gainesville mortuary population include six instances of dental pathologies and 14 instances of porotic hyperostosis (Tables 7 and 8).

The pathologies indicative of degneration of the skeletal tissues are those common to all geriatric individuals. Other than the normal processes of aging, however, degeneration of skeletal tissue can be affected by diet, prolonged illness, or certain habitual cultural practices or behavior, such as everyday activities. Degenerative pathologies increased 3.63 percent from the *Catfish Bend to Gainesville subphase* and decreased 9.25 percent between the Gainesville and Summerville I mortuary populations.

Summary

In this section the osteological data from the transitional Late Woodland to early Mississippian period spanned by the Catfish Bend, Gainesville, and Summerville I mortuary populations at Sites 1Pi61 and 1Pi33 were considered to determine if any trends or tendencies were apparent.

Mortality graphs provided an index to the adaptive success of each of the three populations. The Catfish Bend and Summerville I mortality graphs both exhibit unimodal distributions with peak death rates at 35 years in each instance. The Gainesville mortality graph exhibits a bimodal distribution with peak death rates at 5 and 35 years. The Gainesville mortality graph indicates that a high percentage of the population did not survive to reproductive age resulting in a loss to the population gene pool.

The high incidence of early death in any population is a good indication that the population is undergoing adaptive stress. This adaptive stress is not apparent for the earlier Catfish Bend population which seems to be in an adaptive steady state from the mortality graph.

The pathologies--which are here assumed to reflect particular environmental stresses--show that the stressors which later became intensive

enough to be deleterous to the Gainesville population, were exerted primarily on adults in the Catfish Bend population.

The Summerville I population shows a sharp decline in the incidence of all pathologies which in all categories except nutritional stress are considerably lower than the incidence of pathologies noted for the Catfish Bend subphase population. The high incidence of Summerville I nutritional stress reflects the relatively large number of dental pathologies noted for the Summerville I population. If the concept of nutritional stress is restricted to the incidence of porotic hyperostosis only two individuals or 10.53 percent of the Summerville I population evidenced nutritional disease.

The low incidence of infection in the Summerville I population, which is normally interdependent with nutritional disease, suggests that the Summerville I dental pathologies may reflect a set of variables independent from those that produced higher incidences of both nutritional disease and infection in the earlier Miller III populations.

At what point does one biocultural system evolve into another and how is this transition made apparent in the archaeological record? The transition from egalitarian to nonegalitarian social structure, from Woodland to Mississippian, can be inferred from the nonrandom placement of individuals in particular areas of a site, as well as the burial accoutrements and the amount of energy expended in burial preparation.

Status distinctions can be made in more subtle ways as well. Differential access to resources would leave an imprint on the populations themselves in terms of the overall health and patterning of pathologies within and between populations. For example, Buikstra (1972) noted an apparent correlation between stature and elaborate burial preparation, for which she offered three possible explanations: (1) the migration or foreign power hypothesis--taller individuals represent an intrusive population that maintained the power to require special burial treatment for their dead, (2) the internal differentiation hypothesis--those groups maintaining positions of power (higher social status) could have been small inbreeding units resulting in a significant increase in stature, (3) the dietary hypothesis--higher status individuals could have privileged access to food resources and, therefore, be under less dietary stress than others in the same social unit. In other words, a better diet could result in an increase in stature (Buikstra 1972:76-83).

The demographic profile of the Summerville I population can probably be attributed to a combination of all three of the explanations offered by Buikstra. Differential access to resources is indicated not only by mortuary treatment, but by skeletal and faunal data (Scott 1981, Woodrick 1981b) as well. Although the entire Summerville I population at Lubbub Creek (Powell 1981) appears to have been in good health compared pathologically to the preceeding two Miller III subphase populations, certain individuals in the cemetery at Site 1Pi33 appear to have been taller than the rest of the population. This difference is not very great, however, and does not suggest that these individuals were members of an outside group which exacted control over the rest of the population. It is probably more likely that these individuals were part of a smaller, perhaps

inbreeding unit that had preferential access to resources that would have improved their overall health status. Preferential treatment of the elite offspring from the time of birth, which may have included certain grooming behavior as well as prescribed activities and a preferential diet, may not only have led to an increased stature, but perhaps also to improved muscle tone and development indicated by the robust males also found in the Summerville I cemetery. The combination of male and female skeletal characteristics noted for individuals in the Summerville I cemetery may also be an indication of inbreeding.

Of the 14 Summerville I individuals examined by Powell (1981) elsewhere within the Lubbub Creek Archaeological Locality, pathologies were restricted to one traumatic injury noted for an adult female (USN 5458). The injury on the right frontal had healed prior to death. Porotic hyperostosis was specifically not present in the Summerville I village sample. Infectious diseases specific to the Summerville I individuals were not described, but Powell (1981:439) noted low levels of infectious reactions and of developmental and degenerational disorders for the entire Mississippian sample. In general, the Lubbub Creek "Mississippian adaptation represented an optimization of human ecological relationships . . . (Powell 1981:451)."

Powell (1981:454) observed that the low levels of infectious diseases noted for the Mississippian population at Lubbub Creek contrasts with an increase of infectious pathologies noted for Mississippian populations elsewhere when compared to the earlier Late Woodland populations.

The osteological analysis of the Summerville I population at Site 1Pi33 considered in this Appendix, which may be the elite section of the population examined by Powell, gives firm support to Powell's assessment of the optimum adaptiveness of the Summerville I population at Lubbub Creek.

The Late Miller III data further shows that this adaptiveness was intrinsic to the Summerville I population. For the Catfish Bend subphase severe social stresses are indicated by the high incidence of trauma, especially of nonaccidental trauma, and the relatively high incidence of unusual Catfish Bend interments such as burial in midden and refuse pits, under the floor of a structure, multiple or mass burials, and one or possibly two instances of decapitation. The later Gainesville subphase mortuary population shows that these stresses continued and were intensified to the extent that infant mortality rates and levels of nutritional stress and infectious responses increased over Catfish Bend levels. The Summerville I mortuary population, which may be partially contemporaneous with the Gainesville subphase, shows a dramatic decrease in all pathologies, except those reflecting nutritional stress. Most of the Summerville I instances of nutritional stess were dental pathologies—only two instances of generalized nutritional disease were noted at Site 1Pi33.

The Summerville I village sample analyzed by Powell (1981) was apparently even more healthy than the group represented at Site 1Pi33. Fewer dental pathologies were noted for the village sample. Powell did note, however, that the pattern of dental caries was more similar to the

Late Woodland population at Site 1Pi61 than to the Mississippian population at Site 1Pi33 (Pearce and Mayfield 1978). Powell suggested that the observed differences in dental pathologies between the two Summerville I groups may be due to dietary differences.

The cumulative archaeological evidence from the Gainesville Lake area and Lubbub Creek excavations for the environmental stresses that could have produced the biological results apparent in the Catfish Bend, Gainesville, and Summerville I osteological data are reviewed in the following section.

ENVIRONMENTAL CORRELATES

The Catfish Bend, Gainesville, and Summerville I mortuary data considered in this analysis spans the 300 year time period between A.D. 900 and 1200. The populations represented in the cemeteries at Sites 1Pi61 and 1Pi33 were separated by a distance of less than 3 km. Similar environmental conditions and resources can therefore be projected for all three populations, given the limitations imposed by environmental modifications made by earlier groups and adaptive innovations introduced by each successive population.

The evolutionary processes described in the preceding sections took place within a circumscribed area encompassed by the 10 km radius catchments of Site 1Pi61 (Caddell 1981a) and of the Lubbub Creek Archaeological Locality (Cole 1981b). The 10 km radius surrounding a base camp encompasses the distance easily traveled in two hours' walk and which was probably the area habitually exploited (Higgs 1975:ix, Lee 1969). The environmental matrix of the evolutionary processes described in this study are therefore well documented. The cumulative evidence for changes in the use of resources during the Late Woodland to Mississippian transition within this environmental matrix is described in this section.

This discussion is complicated by the presence of a third Late Woodland group--the Cofferdam subphase occupation at Lubbub Creek--within the area circumscribed by the 1Pi61 and Lubbub Creek catchments. The Cofferdam occupation at Lubbub Creek dates to A.D. 900 (Peebles 1981) and may have persisted to A.D. 1200 within the Gainesville Lake area (Jenkins, this volume, Chapter V). The Cofferdam suphase, as presently defined, is contemporaneous with the Catfish Bend-Gainesville occupations at Site 1Pi61 and precedes the Summerville I occupation at Lubbub Creek. Only a small portion of the Cofferdam deposits, which appear to be extensive (Peebles 1981), have been sampled.

Unfortunately, any differences in the use of environmental resources by Catfish Bend and Gainesville populations were not distinguished in the analysis of the subsistence data because the features could not consistently be distinguished ceramically. Two significant trends were evident when the early Miller III faunal data were compared to the combined Catfish Bend and Gainesville faunal data. A trend toward increased sedentism and evidence of depletion and diversification of faunal resources were established from the subsistence and settlement data for the Gainesville Lake area.

A trend toward increased sedentism is indicated throughout Miller III by slight increases in the quantities of corn recovered from Late Woodland features. Caddell (1981a:44) noted an increase in corn from early Miller III to late Miller III features. From the presence of corn and the seeds of weedy plants Caddell documented occupation at all of the excavated Gainesville base camps from late spring through early fall. Although the presence of corn indicates that the Late Woodland populations were essentially sedentary throughout most of the year, the quantity of corn never exceeds one percent of any Late Woodland floral assemblage--indicating that corn provided a supplement to other foods and was not a primary staple. No evidence of winter or late spring occupation was apparent in the floral assemblages. Caddell (1981a:50), however, cautioned that winter and early spring occupations cannot be precluded because plants which may have been used during that period are less susceptible to preservation. Numerous storage pits at Site 1Pi61 may have been used for winter storage of fall mast crops (Jenkins, personal communication 1982).

The other subsistence trend established for the Miller III phase is a dramatic decrease in the quantity of deer remains from early Miller III to late Miller III. The percentage of deer remains decreased from 88 percent in Vienna subphase features to 76.5 percent in Catfish Bend and Gainesville features and comprised only 70.9 percent of Cofferdam features recovered during the Gainesville excavations (Woodrick 1981a, Table 38). Deer remains from the Lubbub Creek Cofferdam subphase features analyzed by Scott (1981) were only 50.9 percent (count 30) of the identified mammal and turkey remains. [This percentage was obtained by considering only the faunal categories represented in both Woodrick's (1981a) Table 38 and in Scott's 1981 Appendix A. The data for the two analyses were not presented in categories which could be readily compared]. The single Gainesville subphase feature excavated at Site 1Pi33 contained a similar low percentage of deer remains--56.6 percent of the mammalian bone by count (Woodrick 1981a, Table 22).

Given that all of these percentages reflect the use of deer in late spring through early fall base camp contexts, they reflect a decrease in the number of deer within normally exploited catchment areas. Transitory camps, interpreted as winter hunting camps, have been identified both in the Fall Line Hills east of the river and in the prairie grasslands west of the river (Jenkins, personal communication 1982). Faunal recoveries from the Gainesville Lake area base camps show that an increase in the use of small mammals, turtles, fish, and shellfish was concomitant with the decrease in deer throughout the Miller III period.

The decrease of deer bone from 88 percent in Vienna subphase features to 50 to 60 percent in Catfish Bend, Gainesville, and Cofferdam features is interpreted as a direct result of population increases during the late Miller III period. As shown in Caddell's (1981a) Figure 1, the catchments of Sites 1Pi61, 1Gr1X1, and 1Gr2 overlap and contain most of the catchments of Sites 1Pi33 and 1Gr50. Consequently, if resources in any given catchment were depleted even temporarily, competition for available food resources could become critical.

Caddell's (1981a:12, Fig. 1) 10 km radius catchment studies for Sites 1Gr1X1, 1Gr1, and 1Pi61, based on United States General Land Office Survey

notes and plats recorded in surveys in 1820, 1832, and 1834, indicate that within the Gainesville Lake area:

> . . . during all cultural periods, the inhabitants did not go far to gather the spectrum of plants represented in the samples. With the exceptions of tropical cultigens, all plants are locally available (Caddell 1981a:49).

A more detailed study of the Lubbub Creek 10 km radius catchment (Cole 1981b) indicates that Caddell's statement can be generalized to include all faunal species represented in the Late Woodland samples as well.

The Lubbub Creek occupation was situated within a meander belt zone presenting a highly diversified series of microenvironments, each with a characteristic inventory of floral and faunal species. The Lubbub Creek catchment analysis (Cole 1981b) differed from Caddell's analysis for Site 1Pi61, which encompasses much of the same area, in that floral and faunal habitats were projected from the distribution of soils mapped on the Pickens County soil map (O'Neal et al. 1917). The results were similar to those obtained by Caddell--with one significant difference. Based on data reported by the early 19th century surveys, the slopes west of the Lubbub Creek Archaeological Locality were mapped as slope forest (Caddell 1981a: 13). This is a fairly dense forest of oak, hickory, and pine (Caddell 1981a, Table 3) with little understory development that would provide favorable habitats for concentrated populations of animals. The Lubbub Creek catchment analysis indicated that Oktibbeha (red prairie) soils are mapped for these slopes (Cole 1981b, Fig. 3). The red prairie soils support a relatively open forest of post oak, hickory, ash, maple, dogwood, cedar, and pine which would have provided faborable habitats for deer, cottontail rabbits, and turkeys on a year round basis. Concentrated populations of deer and turkeys would be present in this forest as the nuts ripened in late fall and early winter.

The red prairie soils comprised 9.55 percent of the Lubbub Creek catchment area. Slope and terrace forests comprised 48.26 percent, floodplain forests comprised 21.51 percent, Coastal Plain upland forests comprised 8.68 percent, and Black Belt soils (white and black prairie grasslands) comprised 12 percent of the Lubbub Creek catchment (Cole 1981b:36).

Since the red prairie forest was directly accessible to the Late Woodland inhabitants at Lubbub Creek (without crossing the river) it seems unlikely that the population would resort to seasonal relocation even during the winter, unless local resources were depleted.

The overlapping catchments mapped by Caddell (1981a:Fig. 1) and Cole (1981b: Fig. 3) indicate that the Lubbub Creek and Site 1Pi61 catchments encompass much of the same area. Since the Cofferdam subphase at Lubbub Creek and the Catfish Bend-Gainesville subphase populations at Site 1Pi61 were contemporaneous, over exploitation of resources seems highly probable.

Transitory camps, interpreted as winter hunting camps or other temporary procurement stations, identified in both the Fall Line Hills east

of the river and in the prairie grasslands west of the river have not been adequately investigated to interpret either their temporal relationship to the late Miller III Cafish Bend, Gainesville, and Cofferdam subphases or their contribution to Late Woodland subsistence. The resource potential of the Black Belt grasslands has not been adequately evaluated, but it would appear that Late Woodland exploitation of this area reflects an attempt to diversify the available resources to compensate for the expanding human population.

The mortuary data from the Catfish Bend, Gainesville, and Summerville I cemeteries, together with the cumulative subsistence and settlement data from the Gainesville and Lubbub Creek excavations indicates that the Late Woodland populations had exceeded the carrying capacity of available resources by A.D. 1000 when evidence of nutritional stress severe enough to threaten continued existence is reflected in the Gainesville mortuary population. This condition was foreshadowed during the earlier century by conditions of social stress reflected in the unusual incidence of violence in the Catfish Bend subphase mortuary population. This imbalance between population and resources is shown in the decline of deer remains and the increase in the use of second line resources as indicated by Jenkins (this volume, Chapter V) and in the overlapping catchments of the Miller III base camps. The resolution to this evolutionary stress is reflected in the general health of the Summerville I mortuary population, both in the elite cemetery at Site 1Pi33 and in the village population analyzed by Powell (1981). By A.D. 1100 or earlier, a fully horticultural settlement at Lubbub Creek was able, with the same resources available to the Late Woodland population, to effect a successful adaptation to local environmental conditions. This was achieved by reversing the proportions of horticultural and wild resources to establish a new subsistence base.

As shown in Table 15, the Miller III to Mississippian transition was characterized by the replacement of nuts by corn as the dominant plant food. Hickory nuts, with smaller amounts of acorn and walnuts, dominated the Miller III Vienna, Catfish Bend-Gainesville, and Cofferdam floral assemblages. The relatively high percentage of acorns in Cofferdam features at Lubbub Creek may reflect the difference in recovery procedures or differences in the composition of forests adjacent to different sites. The red prairie post oak forest on the slopes adjacent to the Lubbub Creek Archaeological Locality would have been less accessible to contemporaneous inhabitants of Site 1Pi61 on the opposite bank of the river.

Caddell summarized the Late Woodland-Mississippian transition as follows:

> . . . Nuts were predominant in Late Woodland contexts, forming over 99 percent of the plant food remains. Acorn and hickory nuts appeared to be equally important. Maize fragments occurred in over half of the Late Woodland features, but they formed less than one percent of the plant food remains. . . .
>
> In Mississippian samples, maize constituted the largest portion of plant food remains, but it appeared that nuts, especially hickory nuts, were also consistently used, because nutshells occurred in more features than maize fragments (Caddell 1981b:272).

Table 15. Summary of Plant Food Remains from Miller III and Summerville I Features.

	No. of Features	Percent of Total Weight					
		Hickory	Acorn	Walnut	Zea	Wood	Other
Summerville I*							
Lubbub Creek Cofferdam*	7	1.28	0.64	-	51.44	37.66	8.97
Lubbub Creek	37	30.18	9.11	0.27	0.12	52.28	8.04
1Gr1X1**	8	8.28	1.64	0.05	p	39.61	50.12
1Gr2**	10	12.47	0.80	-	p	54.14	32.60
Catfish Bend-Gainesville**							
1Pi61	16	31.69	ss	0.60	ss	58.15	9.56
Vienna**	10	39.02	0.64	1.27	-	57.07	2.00

Sources: Caddell (1981b), Tables 4 and 6, Caddell (1981a), Tables 9, 13, and 20.
* Floatation samples from features.
** 1/4 in screen.
p Present, weight negligible.
ss Recovered from soil samples, but not from 1/4 in screen.

Caddell's (1981b:244) Table 28 shows that the protein content of corn is only 8.9 g (per 100 grams), compared to 13.2 g for hickory nuts and 20.5 g for black walnuts, and the carbohydrate content is correspondingly much higher (72.2 g compared to 12.8 g for hickory nuts and 14.8 g for walnuts). Consequently, the substitution of corn for hickory and other nuts in any dietary regime could contribute to a protein deficiency unless proteins were obtained from other sources.

There is some evidence of slight dietary differences between the Summerville I population interred at Site 1Pi33 and the Summerville I village sample at Lubbub Creek that indicates that the diet of the elite population may have contained more carbohydrates and that high protein foods were selected to compensate for an excessive carbohydrate intake. This difference is reflected in the higher incidence of dental pathologies noted for individuals in the Summerville I cemetery at Site 1Pi33 than among the Summerville I village population. Powell (1981) suggested that the higher incidence of dental caries for the population at Site 1Pi33 may reflect a diet slightly higher in starchy carbohydrates. Analyses of fauna (Scott 1981) and of molluscs (Woodrick 1981b) at Lubbub Creek both indicate Mississippian selection of faunal resources and elements for greater protein content.

Scott (1981) compared faunal species represented in the mound and village areas at Lubbub Creek for the Mississippian period. The percentages of fish and turtle bones were higher than expected and opossum, bobcat, squirrel, beaver, snapping turtle, catfish, and sunfish were

over-represented in the mound sample. Swamp rabbits, larger than cottontails, were more common in the mound area and a disproportionately greater number of deer forelimbs and mandibles were also present in the mound sample. Scott (1981) suggests that this inventory could indicate selection for fish and deer cuts with higher protein and less fat than those fish species and deer elements represented in larger quantities in the village area. Nearly half of the rat and mice bones recovered at Lubbub Creek were from the mound sample and Scott suggests that this concentration of rodents could represent the location of stores.

A selection for high protein species and elements could reflect an effort to compensate for a potentially excessive carbohydrate diet. Scott's tentative identification of faunal selectivity suggests that the Lubbub Creek elite community may in fact have had a slightly different dietary intake than the general Mississippian population. If so, this elite diet apparently contributed to the only significant pathology in the Lubbub Creek Mississippian population. Both the subsistence and osteological data indicate that the Mississippian adaptation contributed to the general health of the population. The Summerville I residents of the premound precinct who were interred in the cemetery at Site 1Pi33 may have effected this successful organization at some personal cost in health and vulnerability, if Burial 208 represents a Summerville I assassination.

SUMMARY

The mortuary characteristics and osteological analysis of cemeteries representing the Catfish Bend, Gainesville, and Summerville I populations were described in the preceding sections. The Catfish Bend and Gainesville mortuary attributes were not mutually exclusive, but do suggest that certain distinctive characteristics describe each of the populations. The mortuary analysis generally supports the separation of Gainesville subphase from Catfish Bend subphase burials proposed by Jenkins based on the association of shell tempered pottery with Gainesville subphase burials.

In general the Catfish Bend interments were characterized by tightly flexed burials with no particular orientation and large and small basins were more common than rectangular burial pits. Four of the Catfish Bend burial facilities were recycled refuse pits, and two individuals were interred under the floor of a structure with no discernible prepared burial facility. Artifact associations were restricted to local and common marine shell beads and pendants and these were associated with all age and sex classes. Although an exceptionally large number of females appear to be elaborated with shell artifacts, this may reflect the disproportionate number of young adult and adult females in the Catfish Bend cemeteries. Women of reproductive age (16+ years) comprised nearly half (44.4 percent) of the Catfish Bend mortuary population. Only 18.2 percent of the Gainesville subphase population and 26.3 percent of the Summerville I population at Site 1Pi33 were women of reproductive age.

Most Gainesville subphase interments were flexed on back, some were flexed on side similar to the Catfish Bend interments, and two were extended as were the majority of the Summerville I interments at Site 1Pi33. Most orientations were to the southeast, northeast, or east. Nearly half

of the interments (48.14 percent) were in rectangular basins. Most of the remainder (37 percent) were large or small basins suggesting that intentionally prepared burial pits were the preferred mode of interment. One Gainesville subphase interment was placed in a possible refuse pit and two others were recovered in the midden with no discernible pit.

Although women of reproductive age comprised the largest portion of the Catfish Bend subphase mortuary population, children and infants comprised the greatest portion (36.4 percent) of the Gainesville subphase population. Of the 33 Gainesville subphase interments, 12 had associated artifacts. These were, with two exceptions, shell beads or pendants and were associated with all age and sex classes indicating the same artifact types and distribution of the Catfish Bend subphase. The two greenstone celts may mark statuses of extralocal significance.

Marginella and other marine shells used for the manufacture of beads and pendants were relatively common in both the Catfish Bend and Gainesville cemeteries. Their distribution parallels the distribution of locally available Goniobasis shell beads and, consequently, marine shell does not appear to be restricted to individuals of a particular status category different from that marked by locally available shell. The presence of marine shell in Catfish Bend and Gainesville mortuary contexts documents the existence of an exchange network or direct access to Gulf Coast marine resources and could indicate that alliance, trade, and perhaps also marriage exchange relationships were maintained between the Gainesville Lake area and the Gulf Coast. Weeden Island sherds recovered from the Gainesville Lake area and Miller III ceramic assemblages identified near Mobile Bay constitute the only other evidence of this exchange system.

The mortuary attributes suggest that the Catfish Bend and Gainesville cemeteries represent distinct but closely related populations. The slight differences between them are to be expected considering that the estimated time spanned by both populations is only 200 years. In contrast, the osteological evidence shows significantly different environmental stresses for the two populations.

Differences between the Catfish Bend and Gainesville population are more strongly indicated by biological than by cultural data. The sex and age composition of the late Miller III cemeteries indicates that the main distinction between them is the excessively high proportion of adult women in the Catfish Bend cemeteries, and of infants in the Gainesville cemeteries. The sex and age data indicates strong stresses on Catfish Bend women, Gainesville subphase infants, and none on these same age-sex groups for the Summerville I population. The mortality data suggests that the Summerville I population was probably approaching an adaptive steady state.

The stresses reflected for the Catfish Bend women (reproducers) and the subsequent Gainesville population infants (replenishers) if continued, could result in a significant gene pool loss and ultimate extinction of the population. The presence of a remarkably healthy Summerville I population at Lubbub Creek at A.D. 1000 in fact documents the cultural extinction of the Late Woodland population. Surviving Woodland individuals were probably incorporated into the Summerville I village community at Lubbub Creek and nearby farmsteads along the river.

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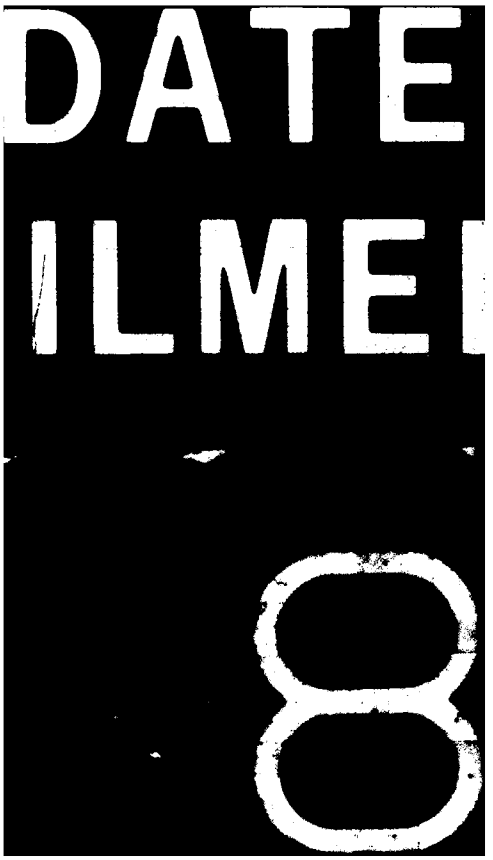
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